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NOTES ON THE BIRD GENUS *OENANTHE* IN PERSIA, AFGHANISTAN, AND INDIA[1]

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INTRODUCTION

This study is presented in the form of a review of the genus *Oenanthe* as it occurs in western Asia, with special emphasis on Persia and Afghanistan. This form of presentation has been chosen because of the great wealth of material at hand, and because Persia especially, where 11 species breed and another has occurred, is the part of the world in which the genus is best represented.

More than 600 specimens were collected by Koelz in Persia and Afghanistan. Dr. Koelz is to be highly complimented, as all the species are represented by fine series. This is the largest collection ever to come from Afghanistan, and, with the possible exception of Zarudny's, the largest for Persia. Rich as this material is, it does not cover all the regions of Persia and Afghanistan, but in the case of Persia I am fortunate in having a good part of the large series collected by Zarudny in eastern Persia, Seistan, and Persian Baluchistan. These series of Zarudny, as well as the rest of the comparative material, are in the collection of the American Museum of Natural History.

The specimens collected by Koelz are listed at the end of the paper. To conform to Meinertzhagen's fine presentation of the genus in Egypt, this paper is preceded by a table of wing formulas and a key to the species that occur regularly or have been reported in Persia, Afghanistan, and India.

[1] Notes from the Walter Koelz Collections, Number 3. The previous papers in this subseries are: Number 1, American Museum Novitates, no. 1406, 1949; Number 2, American Museum Novitates, no. 1424, 1949.

To Dr. Ernst Mayr I am greatly indebted for many suggestions. I am deeply grateful for his friendly assistance and his continued interest in these studies.

REFERENCES

References to the literature are given in full in the text, with the exception of the two following papers. As these are mentioned frequently, full reference to them is omitted, and they are given here with a brief statement of their contents:

MEINERTZHAGEN, RICHARD

1930. Nicoll's birds of Egypt. London, Hugh Rees, vol. 1, pp. 258–281, pls. 10–12.

An excellent account of the species occurring in Egypt, which include two additional species (*leucura* and *moesta*) not covered in the present paper. A table of wing formulas, a key to the species, and diagrams of tail pattern are given. Eight of the species are well illustrated in three color plates.

ZARUDNY, N., AND M. HÄRMS

1926. Bemerkungen über einige Vögel Persiens. Teil 4. Jour. Ornith., vol. 74, pp. 1–52.

Most valuable for its very detailed account of the distribution and movements of the Persian forms.

SYSTEMATIC LIST OF THE SPECIES FOUND IN PERSIA, AFGHANISTAN, AND INDIA

Synonyms confirmed or established by this study are included. The range is stated briefly. It should be noticed that *pleschanka* and *deserti* breed in Afghanistan; Walter Koelz is to be credited for adding these two species to the breeding birds of that country.

Oenanthe xanthoprymna xanthoprymna Hemprich and Ehrenberg

Breeds in southwestern Persia along the outer Zagros.

Oenanthe xanthoprymna chrysopygia de Filippi

Breeds in the inner Zagros in southwestern Persia, and in the northwest, north, south, and southeast; the northeastern population (Khorasan) is intermediate between this race and the following.

Oenanthe xanthoprymna kingi Hume

Breeds in Afghanistan, in winter in northwestern India south to Kutch.

Oenanthe oenanthe oenanthe Linnaeus

SYNONYMS: *Oenanthe oenanthe rostrata* Hemprich and Ehrenberg.
Oenanthe oenanthe argentea Lönnberg.

Breeder and migrant in northern, western, southern, and eastern Persia, and in Afghanistan; migrant and possibly breeder in Kashmir and northwestern India.

Oenanthe pleschanka pleschanka Lepechin

Breeder and migrant in northern, western, southwestern, southern, and eastern Persia, in Afghanistan, northern Punjab, and Kashmir; migrates through northwestern India, and probably Sind.

Oenanthe hispanica melanoleuca Güldenstädt

Breeds in northern (Gilan), western, southwestern, and southern Persia (Fars).

Oenanthe picata Blyth

Breeds in northern, southwestern, southern, and eastern Persia (chiefly *picata* phase, *capistrata* phase rarely in the east, one April 16 record for *opistholeuca* phase in the northeast); in Afghanistan (all three phases), in Kashmir and northwestern India (all three phases); in winter *picata* phase very abundant in northwestern India.

Oenanthe lugens lugens Lichtenstein

Strays to southwestern Persia, two March records near Dizful (Zarudny and Härms, 1926, p. 37).

Oenanthe lugens persica Seebohm

SYNONYM: *Oenanthe lugens sarudnyi* Härms.

Breeds in southwestern, southern, and southeastern Persia.

Oenanthe finschii finschii Heuglin

Breeds in northwestern, southwestern, and southern Persia (Fars).

Oenanthe finschii barnesi Oates

Breeds in northern (region of Gurgan) and northeastern Persia,

migrant in the southeast; breeds in Afghanistan and, according to S. Baker, in northwestern India.

Oenanthe deserti atrogularis Blyth

Breeds in northern, southwestern, southern, northeastern, and southeastern Persia; migrant in southern and southeastern Persia, Seistan, Afghanistan, and western India. The breeding Afghanistan population is intermediate between this race and the following.

Oenanthe deserti oreophila Oberholser

Breeds in Kashmir; migrates through Afghanistan to Seistan, southeastern, and southern Persia, and, according to S. Baker, has been found in India in winter in Sikkim and Assam. As this race breeds in Tibet, it is possible that it also breeds in northern Sikkim.

Oenanthe isabellina Temminck

SYNONYM: *Oenanthe isabellina kargasi* Koelz.

Breeder and migrant throughout Persia and Afghanistan. In India, breeds in Kashmir (an April 29 specimen examined) and migrates through northern India (Sikkim specimen examined).

Oenanthe monacha Temminck

Breeds in southern Khorasan, southern, and southeastern Persia. Not recorded from Afghanistan, but in India a winter specimen has been taken in Sind (S. Baker).

Oenanthe alboniger Hume

Breeds in southwestern, southern, and southeastern Persia, and probably in southern Afghanistan. In India probably breeds in Sind; winter specimens from Kashmir and Sind examined.

Oenanthe leucopyga subspecies

A stray has been collected in southwestern Persia near Ahwaz (Zarudny and Härms, 1926, p. 48).

TABLE 1

WING FORMULAS IN THE SPECIES OF THE GENUS *Oenanthe* FOUND IN PERSIA, AFGHANISTAN, AND INDIA

(Both sexes in adult and first winter plumage; + signifies longer than; =, equal to; −, shorter than.)

Species	Total Specimens	First Primary Longer or Shorter Than Primary Coverts (in mm.)	Second Primary Longer or Shorter Than:		Innermost Emarginated Primary
			Fifth	Sixth	
xanthoprymna	59	1 to 8 (4.0) +	−5	+6	5
oenanthe	75	1 to 8 (3.9) −	+5	+6	5 (slightly) in 19%
pleschanka	104	±[a]	−5	+6	5
hispanica	53	+, sometimes =[b]	−5	+6	5
picata	78	3 to 8 (5.4) +	−5	−6	6 (slightly) in 94%
lugens	13	1 to 6 (4.0) +	−5	+6	5
finschii	50	1 to 7 (4.0) +	−5	±6[c]	6 (slightly) in 80%
deserti	84	±[d]	±5[e]	+6	5
isabellina	86	−, sometimes =[f]	+5	+6	5 (slightly) in 88%
monacha	22	1 to 4 (2.2) +	±5[g]	+6	5
alboniger	28	4 to 10 (6.7) +	−5	±6[h]	6 (slightly) in 48%
leucopyga	25	2 to 9 (5.5) +	−5	+6	6 (slightly) in 56%

[a] In 57 specimens, 1 to 6 (2.2) +; in 27, =; in 20, 1 to 3 (1.5) −.
[b] In 42 specimens, 1 to 8 (3.1) +; in 11, =.
[c] Relation in 41 specimens: 17+, 9=, 15−.
[d] In 7 specimens, 1 to 2 (1.3) +; in 33, =; in 44, 1 to 3 (1.5) −.
[e] Relation in 81 specimens: 19+, 23=, 39−.
[f] In 65 specimens, 1 to 8 (2.5)−; in 15, =.
[g] Relation in 21 specimens: 10+, 8=, 3−.
[h] Relation in 28 specimens: 9+, 5=, 14−.

INTRASPECIFIC CHARACTER VARIATION

As shown in table 1, there is a great deal of intraspecific variation in the structure of the wing. All but two species are affected by this variation, which may consist in the first primary's being longer or shorter than the primary coverts, the second primary's being longer or shorter than the fifth or sixth, and in the presence or absence of emargination at the tip of the fifth or sixth primary. The percentage of specimens showing emargination is indicated in the body of the table, and in the case of the variations in the first and second primaries the number of specimens is given in the footnotes.

Intraspecific variation in the pattern of the plumage or its

coloration occurs in six of the 12 species. In *xanthoprymna, pleschanka, hispanica, picata, lugens,* and *leucopyga* the crown or the throat may be black as against white or buffy. I have included *lugens* for, although in our region there are no variations in the plumage, in its north African race female *lugens* may or may not have a blackish throat. The variation in coloration may affect the tail, in many species the size of the terminal spots is highly variable, and the spots may disappear almost completely on the outer rectrices. In *xanthoprymna,* where the rufous tail would appear to be a fundamental specific character, one of its races, nominate *xanthoprymna,* has the sides of the tail white.

Sometimes the variation affects both the plumage and the structure of the wing as in *pleschanka, hispanica, picata,* and *leucopyga.*

In short, all 12 species, which represent two-thirds of the total number of species in the genus, including virtually all of its "typical" members, vary intraspecifically at one point or another. It would appear, in the genus *Oenanthe* at least, that specific characters do not always have the fixity that has been claimed for them by some authors.

Key to the Species of the Genus *Oenanthe* Found in Persia, Afghanistan, and India

(Both sexes in adult and first winter plumage; "♀" includes immature males.)

1. Upper tail coverts rufous ..... *xanthoprymna,* ♂ ♀
   Upper tail coverts white 2
2. Outermost tail feather much more than half black ..... *deserti,* ♂ ♀
   Outermost tail feather half or much less black 3
3. Abdomen black 4
   Abdomen white or buffy 5
4. Plumage dull black, second primary shorter than sixth ..... *picata* (part) ♂, (*opistholeuca* phase)
   Plumage glossy black, second primary longer than sixth ..... *leucopyga,* ♂ ♀
5. Second, third, fourth, and fifth tail feathers completely white or creamy, or only with slight pale brownish markings at the tip ..... *monacha,* ♂ ♀
   All tail feathers with black or dark brown apical band 6
6. Second primary longer than both fifth and sixth 7
   Second primary not longer than both fifth and sixth 8
7. Axillaries white throughout or mostly white, bill heavier and thicker, averaging longer (86 specimens: 19–22, average 20.32) ..... *isabellina,* ♂ ♀
   Axillaries dark at the center with narrower whitish fringes, bill more slender,

averaging shorter (75 specimens: 17–21, average 19.07)..... .....*oenanthe*, ♂ ♀

8. Second primary shorter than both fifth and sixth.....9
   Second primary shorter than fifth, but equal to or longer than sixth.....10
9. Black plumage parts glossy, larger (57 specimens: wing, 95–107, average 102; bill, 20–22, average 20.5).....*alboniger* (part), ♂ ♀
   Black plumage parts dull or plumage brown, smaller (114 specimens: wing, 85–97, average 91.5; bill, 17–19, average 17.8)....*picata*, ♂ ♀ (Plumage brown, *picata* ♀; black with black crown, ♂ *picata* phase; black with white crown, ♂ *capistrata* phase)
10. Black plumage parts glossy, crown black.....*alboniger* (part), ♂ ♀
    Black plumage parts dull, crown white, buffy, or brown.....11
11. Lores and sides of face brown or buff.....12
    Lores and sides of face black.....14
12. Smaller dark apical band on outer tail feather (a quarter or less of the length of the feather); sixth primary slightly emarginated near the tip (in four-fifths of the specimens); stouter bill, heavier feet, distinctly more heavily built.....*finschii* ♀
    Larger dark apical band on outer tail feather (a third or more of the length of the feather); sixth primary not emarginated; thinner bill, smaller feet, more slender in general build.....13
13. In fresh plumage brownish gray with feathers of upper surface fringed distally with pale buff; in worn plumage grayer.....*pleschanka* ♀
    In fresh plumage distinctly darker, brown not grayish brown, and feathers without pale fringes; in worn plumage browner.....*hispanica* ♀
14. White or buff (whole feather, not distal fringes) of the crown not reaching the center of the back.....15
    White or buff of the crown extending past the center of the back.....16
15. Under tail coverts strongly tinged with cinnamon; inner webs of the wing feathers partly white.....*lugens*, ♂ ♀
    Under tail coverts white or slightly tinged with creamy buff; inner webs of the wing feathers blackish, without white.....*pleschanka* ♂
16. Smaller black apical band on outer tail feather (a quarter or less of the length of the feather); wing linings whitish or silvery; sixth primary slightly emarginated near the tip (in four-fifths of the specimens); stouter bill, heavier feet, distinctly more heavily built.....*finschii* ♂
    Larger black band on outer tail feather (a third or more of the length of the feather); wing linings blackish or very dark; sixth primary not emarginated; thinner bill, smaller feet, more slender in general build.....*hispanica* ♂

OENANTHE XANTHOPRYMNA

Two races breed in Persia. The first, nominate *xanthoprymna*, is apparently a rare bird and has been found breeding only in a restricted range along the outer Zagros in southwestern Persia in the hills that border the lower Karun River and the Abu-Garga near Shushtar. The second, *chrysopygia*, breeds in the inner Zagros

and is widely distributed throughout Persia, the northeastern (Khorasan) population being paler than the more western and the southwestern birds and approaching closely a paler race (*kingi*) which in Afghanistan replaces *chrysopygia*.

The males of nominate *xanthoprymna* differ from those of *chrysopygia* by having the sides of the head and the throat black and by having the basal two-thirds of the outer rectrices white instead of orange brown. According to Meinertzhagen (1930, pp. 276–277), this white portion of the feather sometimes shows a varying amount of orange brown.

Because of these differences, Härms (1926, *in* Zarudny and Härms, pp. 36–37) strongly questions their conspecificity. However, as Meinertzhagen states (*loc. cit.*), the two are linked by intermediate specimens in which the sides of the head and the throat are black as in nominate *xanthoprymna* and the basal two-thirds of the outer rectrices is orange brown as in *chrysopygia*. This intermediate bird has been described as *cummingi* by Whitaker (1899, Bull. Brit. Ornith. Club, vol. 10, p. 17) from a specimen collected at Fao at the head of the Persian Gulf.

Koelz collected two of these intermediates on December 25 at Kermanshah. Both have the all orange brown tail feathers of *chrysopygia*, and one has the all black throat of "typical" *cummingi*. In the other, however, the center of the throat, from the base of the bill down, is dingy white, and on both sides of this white mark the black feathers behind the gape and on the sides of the throat are tipped with white or invaded by feathers that are partly white. There is more white on the left side than on the right side.

Härms, in an earlier paper (1925, Jour. Ornith., vol. 73, p. 392), states that Zarudny in 1904 found *cummingi* and nominate *xanthoprymna* breeding together and collected them at the same localities in the hills along the lower Karun. In the 1926 paper (*loc. cit.*), he gives a list of nine males, two of which (nos. 5 and 6) are *cummingi* and the other nominate *xanthoprymna*, collected near Dizful on March 22–24 and on the Abu-Garga near Shushtar on April 3.

As the two Koelz specimens from Kermanshah show, *cummingi* is also found farther north and farther inland into the Zagros. In this region *chrysopygia* is also found, and I have also breeding specimens of this form from the region of Durud, not far from where Zarudny collected his interbreeding *cummingi* and nominate

xanthoprymna. It thus appears that, in what is probably a fairly narrow zone, nominate *xanthoprymna* and *chrysopygia* meet and hybridize, the resulting population being intermediate to a greater or less degree. This intermediate population does not seem well established, and the characters of the hybrids (as shown by the Koelz specimens) appear to be too variable to warrant the nomenclatorial recognition of *cummingi*.

Judging by the wording in the Zoological Record for 1942 (vol. 79, Aves, pp. 19 and 68), a recent author, Ivanow, considers that *xanthoprymna* and *chrysopygia* are separate species (1941, Bull. Acad. Sci. U.R.S.S., sér. biol., pp. 381–384). Unfortunately no copy of this paper is available. It must be admitted that our knowledge of nominate *xanthoprymna* is still quite vague, but unless Ivanow has fresh additional material, the specimens of nominate *xanthoprymna* collected so far do not justify its separation as a distinct species.

In my specimens, the specimens from Afghanistan in fresh or very slightly worn plumage (from about the middle of September to the end of October or early November) are paler throughout than the specimens in comparative plumage taken at the same time of the year in Persia. The specimens from Afghanistan are more sandy above; whiter, less tinged with grayish brown and less dingy below; the orange brown of the rump, upper tail coverts, and rectrices is paler. These differences are not great, but they are distinct and constant. With wear, however, the plumage bleaches badly and quickly, and worn specimens from the two regions are indistinguishable. The dark spots near the tips of the outer pairs of rectrices are variable in size, but, taken as a series, they average narrower and smaller in the specimens from Afghanistan.

The name *kingi* Hume is available for this paler race, as it was given to a specimen collected at Jodhpur in western Rajputana on October 29. This specimen was not compared with any other bird, but its description shows it to be an unmistakable *xanthoprymna* which, if only for geographical reasons, must have been a winter visitor of the paler race.

Four specimens taken at Shahrud in Khorasan on September 26 and 27 are clearly paler than the October specimens taken farther west or in southwest Persia (Karaj and Kuh Pansar in Iran, and Durud in Luristan). The coloration of the Khorasan specimens is intermediate between that of these more western birds and that

of the specimens from Afghanistan, though perhaps on the whole closer to the latter.

MOULT: In *chrysopygia* the only specimens showing evidence of moult are an immature male taken on August 28 at Durud, and an adult female from the same locality taken on October 28. In the adult female there are still a few traces of moult, and the immature is moulting into first winter plumage, the moult being limited to that of the body feathers. A similar moult is taking place in immatures of *kingi* of both sexes taken at the end of July and in August, as well as in one specimen as early as June 21. Adults of this race taken from August 26 to September 25 are having a complete moult, the moult being just about over in birds from the middle of September.

MEASUREMENTS: Kermanshah ("*cummingi*"): Two males, wing, 95, 96; tail, 61.0, 61.5; bill, 19.5, 20.0.

Southern, southwestern, western, and central Persia: Wing, 22 males, 90–98 (93.15); 13 females, 89–93 (90.30). Tail, 22 males, 56–62 (58.40); 12 females, 55–60 (57.80). Bill, 20 males, 19–21 (19.50); 13 females, 18.5–20.0 (19.40).

Khorasan: Wing, one male, 93; two females, 89, 92. Tail, one male, 60; two females, 56, 57.5. Bill, one male, 19.5; two females, 19, 19.

Afghanistan (excepting northeast): Wing, 10 males, 89–99 (95.0); three females, 88–94 (91.0). Tail, 10 males, 55–62 (59.0); three females, 53–58 (56.30). Bill, 10 males, 18.5–20.5 (19.40); three females, 18.0–19.5 (18.90).

Northeastern Afghanistan (very worn): Six males, wing, 94–100 (97.60); tail, 58–62 (60.0); bill, 19.5–21.0 (20.20).

As can be seen by the measurements, the birds from the high mountain region in northeastern Afghanistan (region of Zebak) average larger than specimens from the rest of Afghanistan. The north Afghanistan specimens, which were taken towards the end of the breeding season (June 21 to July 27), are in extremely worn condition. If, as seems conservative, 2 mm. should be added to the wing and tail measurements given above, the birds of this region appear to be distinctly larger. A small size difference is also shown in the bill length.

OENANTHE OENANTHE

Meinertzhagen has shown (1922, Ibis, pp. 14–17) why *rostrata* Hemprich and Ehrenberg and *argentea* Lönnberg should be made

synonymous with nominate *oenanthe*. The type locality of *rostrata* is "upper Egypt, northern Arabia, and Syria" and was probably based on migrants whose chief distinguishing character is said to be their longer bill. The type locality of *argentea* is Bura, south of Lake Baïkal, and this form is said to have a paler, more silvery mantle and a whiter forehead.

Meinertzhagen, dealing with the birds of Egypt (1930, p. 263) and those of Afghanistan (1938, Ibis, p. 683), reaffirms his previous conclusion that *rostrata* and *argentea* are not recognizable. In this he is supported by Zarudny and Härms (1926, p. 8) as regards *rostrata* and by Koslowa (1933, Ibis, p. 319) as regards *argentea*. Hartert (1935, Die Vögel der paläarktischen Fauna, Ergänz., p. 310) is evasive but dubious as to the validity of *rostrata*, and as regards that of *argentea* states that Koslowa has shown that the breeding birds of Siberia and central Asia (Jakut region, Transbaïkal region, and Mongolia as far east as the Great Chingan) cannot be distinguished from nominate *oenanthe*.

The matter would appear to be settled, but some authors continue to recognize under the name of *rostrata* migrants in Asia or winter visitors in tropical Africa (chiefly in the east) whose measurements are larger than those of nominate *oenanthe* from Europe. The breeding ground of these larger birds is unknown but is presumed to be somewhere in Asia.

Two recent authors have also supported the validity of *argentea:* Dunajewski (1937, Acta Ornith. Mus. Zool. Polonici, vol. 2, pp. 78–79) and Portenko (1938, Bull. Acad. Sci. U.R.S.S., sér. biol., pp. 1057–1062), the latter also recognizing *rostrata*, the breeding range of which he states is Persia, Kurdistan, and Transcaucasia. Portenko states that *argentea* differs from nominate *oenanthe* by being paler on the forehead, and that *rostrata* differs by having the black of the black parts more intense. Dunajewski upholds *argentea* on the basis of having the edges of the wing feathers "somewhat paler" than nominate *oenanthe* "although the difference is slight," and by having a longer bill and narrower black bands on the tail feathers.

I have therefore examined the large collection of *O. oenanthe* in the American Museum of Natural History and I find that these specimens, with those collected by Koelz in Persia and Afghanistan, support the conclusion of Meinertzhagen and Koslowa that neither *rostrata* nor *argentea* can be recognized.

Coloration

My findings as to coloration agree exactly with those of Koslowa, who states (1933, Ibis, p. 319): "I have carefully compared a large series of birds from different regions of Europe and Asia, and have come to the conclusion that western and eastern males in not very worn spring dress and fresh autumn plumage and all the females cannot be distinguished. Males in worn summer dress are equally similar, but the *number* of very pale grey 'silvery' specimens is larger in the eastern part of the range than it is in the western part. The same must be said about the amount of white on the forehead."

I have examined adult males in breeding plumage from Sweden, western Russia (Pskov), eastern Russia (Orenburg), Persia, Russian Turkestan (Tischkan and the region of the Issyk Kul), Mongolia, and central Siberia on the Lena River. (The number of these specimens and the dates at which they were collected are given in table 2.) Of the 30 specimens from Persia, 24 are in breeding plumage and 23 of these were collected from the middle of March to the end of April in southern and western Persia. Although these specimens had the gonads enlarged, it is possible that some may have been shot while on spring passage to regions farther north, possibly to central Asia. Or, as the species breeds in southern and western Persia, as well as in the northeast and the region south of the Caspian, some or all may have been on their breeding grounds. In any case, none of my populations from the various parts of Europe and Asia can be separated, although, as stated by Koslowa, a greater number of paler specimens are found in Asia. I have a smaller number of adult males in fresh fall plumage. These, as well as all females, also cannot be separated.

In my three largest populations, out of 24 adult males from Persia in more or less worn breeding plumage, eight specimens are very slightly paler, more "silvery" than six out of eight males from Sweden in similar plumage. Two of the Swedish specimens are as pale as the palest Persian specimens. Out of 10 specimens from Russian Turkestan, also in similar plumage, three are paler than the six darker specimens from Sweden. The amount of white on the forehead follows about the same proportion. Under the circumstances, no separation is possible, and it must not be forgotten that, as pointed out by Meinertzhagen (1930, p. 263), this variation may not be geographical but may very well be due to indi-

vidual wear associated with varying local conditions of aridity and exposure.

I find no evidence of geographical variation in the intensity of the black of the black parts in specimens in comparative plumage, as also in the width of the band on the tail feathers. Although Portenko states that in "*rostrata,*" which he says is the breeding form of Persia, the black is more intense, my large series from Persia utterly fails to support him. In males in breeding plumage, the greatest extent of the black band on the outer web of the outermost tail feather measures: Sweden, seven specimens, 17–24 (19.1); Russian Turkestan, 10 specimens, 15–23 (18.9); Persia, 10 specimens taken at random, 15–24 (19.3).

The Afghanistan specimens were collected from July 26 to September 1, and of 16 specimens only seven are adults and four of these are in full moult; the other three are in fresh fall plumage and are identical to the adults in similar plumage collected from August 20 to November 14 in Persia.

Size

If, therefore, separation is not possible on the basis of coloration, the separation would have to be based on size. However, the measurements in table 2 show conclusively that no separation is possible on this basis either. It should be mentioned that in the population from Kenya and Uganda, in the region of which the larger "race" (so-called *rostrata*) is supposed to winter, although 10 specimens out of 30 have a wing length of 100 or more, nine others of these 30 have a wing length of 96 or less. In the case of the bill, seven out of 26 specimens have a bill length (measured from the skull) of 19.5–20.0, but five others of these 26 have the bill length 17.0–17.5.

Portenko's measurements (*loc. cit.*) show also no significant differences. He defines the range of nominate *oenanthe* as Scandinavia to the Jakut region, south of that, that of "*argentea*" from Transcaspia to the Altaï and Mongolia, and that of "*rostrata*" from Persia to Transcaspia. Divided as such, his males and females in breeding plumage measure, for the wing: *oenanthe*, 38 males, 90.2–99.0 (94.7), 30 females, 87.0–95.5 (91.5); *argentea*, 68 males, 93.0–101.6 (96.9), 23 females, 89.2–96.3 (93.2); *rostrata*, 29 males, 93.3–102.2 (96.4), 16 females, 89.5–97.2 (93.0). The bill measurement is not given.

Moult: The moult and plumages of this species have been de-

scribed by Ticehurst (1910, British birds, vol. 3, pp. 391–392) and discussed in detail by Stresemann (1920, Avifauna Macedonica, pp. 157–161).

In the specimens that I have examined, all the adult males taken from the middle of March to the end of April in southern and western Persia are in the gray breeding plumage and are almost fresh or not badly worn. By June 1 in Bakhtiari, western Persia, an adult male is badly worn but has not begun to moult. In a series taken on July 16–20 in the region of Gurgan at the southeastern corner of the Caspian, adults of both sexes are in the midst of a complete moult, and juvenals are moulting into first winter plumage, the moult being partial and involving only that of the body feathers. Adults and juvenals taken from July 26 to September 1 in Afghanistan are undergoing the same moults. By the end of August, in both Persia and Afghanistan, these two moults are virtually over, only a few last traces of moult being still visible in the body plumage of most adults and juvenals.

A partial prenuptial moult through which the males assume the gray mantle of the breeding season takes place on the wintering grounds. In specimens from east Africa (Kenya and Uganda) I have found specimens going through this moult from January 15 to February 24. In one adult male taken on January 27 at Nakuru, the body feathers are very fresh and the moult had already been completed. This seems unusually early, for other specimens had just reached this stage by March 16 at Nairobi River and March 20 at Bura. In two out of seven moulting males, the two innermost secondaries had also been replaced.

Of interest are three additional adult male specimens from Chanlers Falls on December 14, Nairobi on December 28, and Simba on January 29. In these specimens the mantle is gray but very worn, and extreme wear is shown by the rest of the body plumage. The quills, however, show only normal wear, and it seems that the body plumage had failed to be renewed by the postnuptial moult.

OENANTHE PLESCHANKA

The distribution and migrations of this species have been very thoroughly discussed by Grote (1937, Ornith. Monatsber., vol. 45, pp. 115–122). This paper gives a good map and an exhaustive bibliography of 125 titles for this species and *O. isabellina*.

Grote theoretically includes the greater part of Afghanistan

TABLE 2

MEASUREMENTS OF ADULT MALES IN *Oenanthe o. oenanthe*

Region	Date	N	Wing	N	Bill
	Breeding season or on breeding grounds				
Sweden	April 23–July 5	7	94.0–100.5 (97.30)	7	18.0–19.5 (18.60)
Western Russia	April 15–May 1	2	98.0, 98.0 —	2	19.0, 19.0 —
Eastern Russia	April 26–May 15	3	95.0– 97.0 (96.30)	3	18.0–19.5 (18.50)
Persia[a]	March 10–Aug. 31	30	94.0–104.0 (99.30)	28	17.5–21.0 (19.60)
Afghanistan	August 27	1	101.5 — —	1	19.0 — —
Russian Turkestan	May 2–June 13	10	95.0–101.0 (98.30)	10	18.0–20.0 (19.30)
Mongolia	May	1	99.0 — —	1	18.5 — —
Central Siberia	July 8–13	3	95.0–101.0 (98.30)	3	17.5–19.5 (18.60)
	Migrants				
Palestine[b]	March 12–Apr. 2	5	97.0– 99.0 (98.20)	5	17.5–19.5 (18.30)
Egypt	March 24–Apr. 20	6	93.0– 97.0 (95.40)	5	18.0–19.5 (18.40)
Sudan	March 1–20	5	97.5–100.0 (98.70)	5	17.5–20.5 (19.00)
Southern Arabia	September 11–21	2	93.0, 98.0 —	2	19.0, 20.0 —
Eritrea, Abyssinia, Somaliland	Sept. 16–Nov. 18	8	94.0–103.0 (98.00)	8	18.0–20.5 (19.50)
Kenya-Uganda	Sept. 17–March 20	30	94.0–104.0 (98.40)	26	17.0–20.0 (18.70)
Gold Coast, Nigeria, French W. Africa	Nov. 18–April 15	5	95.0–100.0 (96.80)	5	18.0–20.0 (18.80)

[a] May include spring migrants, as explained in text.
[b] One specimen, September 6.

within the breeding range. This has been questioned by Meinertzhagen (1938, Ibis, p. 685) because the only actual record for Afghanistan consisted of a single specimen, a female, collected by him at Bamian on April 22. As the migrations of *pleschanka* are unusually protracted, this specimen could have been still on spring passage.

Now, however, the good breeding series collected by Koelz confirms Grote, at least as far as northeastern and eastern Afghanistan is concerned. This series, which was collected in this region in May, June, July, and August, includes every stage from nestling and immature to adults in full moult and juvenals moulting into first winter plumage. As Afghanistan appears to be suitable territory, there is no reason why the breeding range should not extend clear across north central Afghanistan, to rejoin the breeding grounds in Transcaspia and northern Khorasan.

There are no differences in coloration between specimens in breeding plumage from various parts of the range. Specimens were compared from southeastern Russia (Orenburg and Sarepta on the lower Volga), Transcaspia (Ashkhabad, Tedjen, and Merw), Persia (northern Khorasan in the northeast, Fars in the south, and Luristan in the southwest), eastern and northeastern Afghanistan, Kashmir (Gilgit and Baltistan), northern Punjab (Lahul), Russian Turkestan in the Tian Shan (Djarkend and the region of the Issyk Kul), and from the Altaï. The specimens used were taken from the end of March to the middle of June and are all males in worn adult plumage. It is possible that some of these birds from the more southern regions were still migrating, or they may have been on their breeding grounds, as I have a female from southern Persia collected while laying on March 29 at Niriz in Fars, and Zarudny and Härms (1926, p. 25) have found that they begin to return to southwestern Persia in February. In any case there are no differences in coloration, and there appears to be none in measurements.

The measurements of these worn adult males, to which is added for comparison a series of adult males in worn plumage of *cypriaca* taken on Cyprus from March 28 to April 16, are given in table 3.

In addition to being smaller, *cypriaca* males in worn plumage have the breast more tinged with buff, not nearly so white, and as a series have the white of the crown not quite so pure. No specimens in winter plumage were available.

In fresh plumage, fully adult *pleschanka* measures, in 25 males

TABLE 3

MEASUREMENTS OF ADULT MALES OF *Oenanthe p. pleschanka* AND *O. p. cypriaca*

Region	N	Wing	Tail	Bill
O. p. pleschanka				
Southeastern Russia	6	92–94 (93.5)	55–60 (56.4)	17.0–18.0 (17.4)
Transcaspia	5	91–99 (94.6)	56–62 (59.0)	17.5–18.5 (17.8)
Northeastern Persia	3	91–94 (92.0)	54–61 (57.0)	17.5–18.0 (17.8)
Fars and Luristan	7	91–99 (95.9)	57–62 (59.6)	16.0–18.0 (17.5)
Eastern Afghanistan	2	92, 95 —	58, 61 —	17.5, 18.0 —
Gilgit	2	92, 94 —	56, 56 —	17.5, 17.5 —
Northern Punjab	2	92, 94 —	58, 59 —	17.5, 18.0 —
Russian Turkestan	7	94–99 (96.4)	55–63 (58.7)	17.5–18.5 (17.9)
Altaï	2	92, 92 —	56, 57 —	17.5, 18.0 —
O. p. cypriaca				
Cyprus	16	83–90 (86.4)	51–60 (54.9)	15.5–17.5 (16.7)

and 15 females: Wing, male, 91–101 (96.40); female, 88–96 (92.60). Tail, male, 56–68 (61.0); female, 52–61 (57.35).

In *pleschanka* there is a color phase (*vittata*) in which both the male and female have a white throat. Two of these specimens, an adult male and an adult female, were collected by Koelz on August 21 at Shigar in Baltistan. They were probably local birds, as both were in full moult. Zarudny (1926, p. 26) has collected this phase during the breeding season in southwestern and eastern Persia. Both sexes were collected, and in one mated pair both were *vittata*.

MOULT: Moulting adults and juvenals collected in July and August have been examined from Persia, Afghanistan, and Kashmir. The moult apparently starts towards the end of June, for specimens from the first half of June, although very worn, had not begun to moult. Towards the end of August the moult was just about over. Juvenals moult into first winter plumage at the same time as the adults. Their moult is partial, involving only the replacement of the body feathers and some coverts; in adults the moult is complete.

There is also a partial prenuptial moult. In about a third of the specimens that I have examined from Africa, adult as well as first winter, the feathers on the side of the head, and occasionally those of the throat, are moulting. These specimens were collected from the end of December to the first few days of February.

Relationships

The two closely related species. *O. pleschanka* and *O. hispanica*, form a species group. Both forms are very similar and are virtual geographical representatives.

In wing formula, size and proportions, and in immature plumage they are identical or virtually so. Immatures cannot be distinguished with certainty, and adult females in worn plumage are very difficult to separate. Adult males also resemble one another, especially in fresh plumage when the feathers of the back end in long buffy fringes. In worn plumage the white area extends farther down in *hispanica*, but in a very long series of *pleschanka* occasional specimens are found in which the white reaches onto the back. On the whole *pleschanka* has a little more black at the end of the tail, but this character is so highly variable in both that many specimens are identical. Both migrate in the same direction towards Arabia and east Africa.

But the breeding distribution is even more suggestive, *pleschanka* replacing *hispanica* in the east. In southeastern Europe the two are representative, being separated by a gap in the region south of the lower Danube. The only overlap is in Transcaucasia and in western and southwestern Persia. This overlap is shown in figure 1. However, as this zone of overlap occurs at the periphery of the two ranges and is narrow compared to the rest of the two ranges, it may represent a case of secondary expansion.

The records shown in figure 1 are of birds actually breeding or taken during the breeding season. It will be noticed that I have joined Transcaucasia to western Persia. Grote (1939, Ornith. Monatsber., vol. 47, pp. 54–57) states that in Transcaucasia only *hispanica* is found in the region that extends eastward from the Tchoroch Basin at the southeastern corner of the Black Sea (where both forms breed) to the shores of the Caspian. However, as *pleschanka* breeds to the northwest of Azerbaijan and both forms breed in Gilan and again at Tiflis, it is probable that the zone of overlap extends all the way from Transcaucasia to southwestern Persia as far as Niriz. Grote gives no records east of Tiflis, and I have been unable to find any.

The records are those of the Koelz specimens or are taken from the literature as follows (the capital letter given here identifies the records listed below): B, Blanford (1876, Eastern Persia, London, Macmillan and Co., vol. 2, pp. 150, 152); W, Witherby (1907, Ibis, pp. 82–83); Z, Zarudny and Härms (1926, Jour.

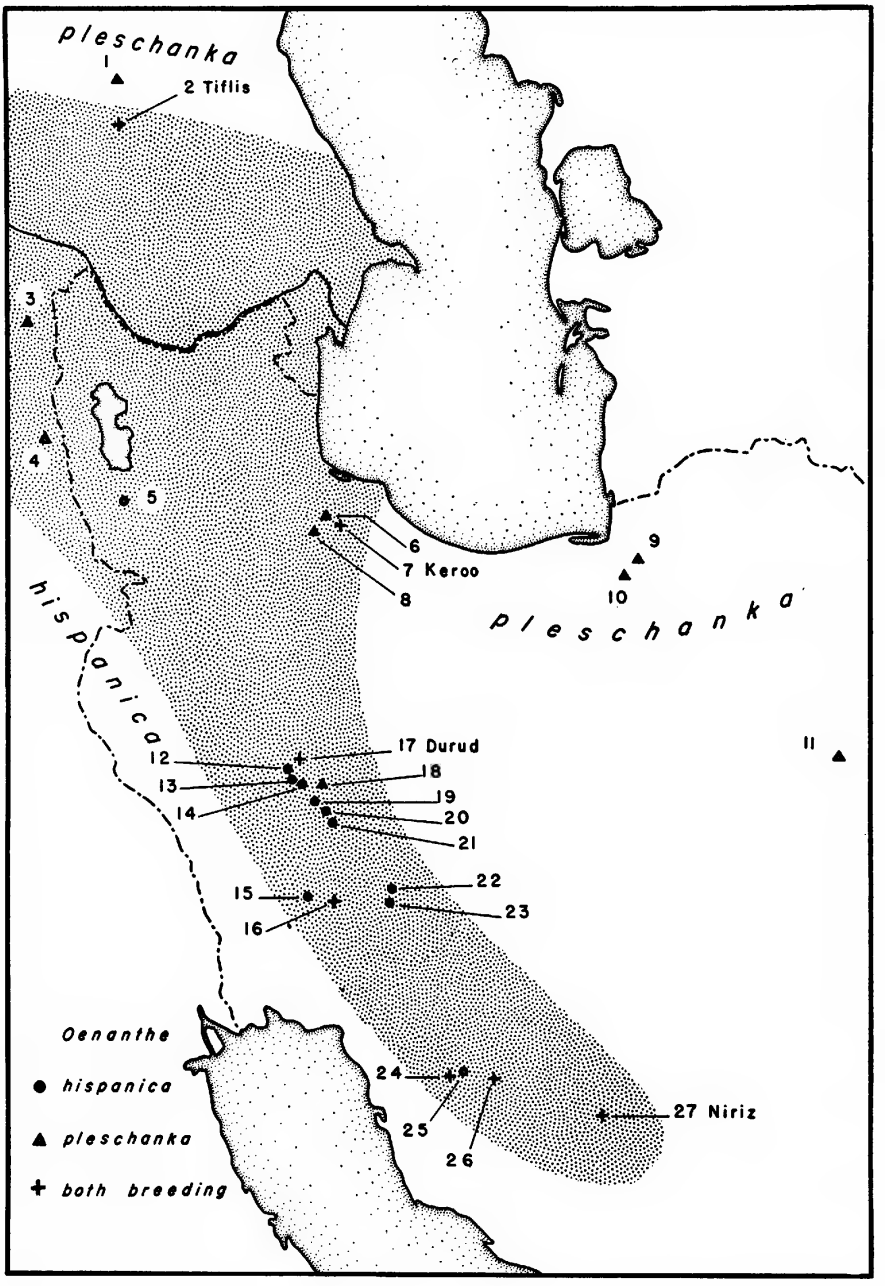

FIG. 1. Zone of overlap of *Oenanthe hispanica melanoleuca* and *O. p. pleschanka* during the breeding season in eastern Transcaucasia and in western and southwestern Persia.

Ornith., vol. 74, pp. 22, 25); S, Stresemann (1928, Jour. Ornith., vol. 76, p. 384); P, Paludan (1938, Jour. Ornith., vol. 86, p. 615); and G, Grote (cited above). Koelz specimens are identified as K. The numbers refer to the positions on figure 1.

Oenanthe hispanica melanoleuca

5—Saujbulagh (W), June 8
12—Garun (K), May 26, and (P) May 18
13—Bishe-Porem (P), April 17–May 12
14—Kalvar (K), May 27
15—Shuteit River (W), March 26
19—Qalichir (K), June 4
20—Pashmshurun (K), May 1
21—Damavar (K), May 4–5
22—Ardal (W), April 21
23—Dopulan (W), April 18
25—Kotalipirzan (K), April 10

Oenanthe p. pleschanka

1—Mleti (G), "breeds"
3—Lake Van (W), June 25
4—Diza (W), June 16
6—Kochrud (Z), May 9
8—Ser i Pul (Z), "nesting" April 16
9—Shahkuh (K), July 19
10—Chehar Deh (S), August 1
11—Firdaus (K), August 29
18—Ti (K), June 4

LOCALITIES WHERE BOTH BREED

2—Tiflis (G), "both breeding"
7—Keroo (Z), *hispanica*, May 26; *pleschanka*, May 25
16—Malamir (W), *hispanica*, April 10; *pleschanka*, April 8
Also (Z) for *pleschanka*, April 13, and near Malamir for *hispanica*, April 22–23
17—Durud (K), *hispanica*, April 19, May 20, June 27, August 19; *pleschanka*, April 16, May 26, June 9, July 19
24—Dastarjin (K), *hispanica*, April 8–10; *pleschanka*, April 9
26—Shiraz (B), *hispanica* and (?) *pleschanka*, June
27—Niriz (K), *hispanica*, March 29; *pleschanka*, "laying" March 29

Localities 6 (Kochrud), 7 (Keroo), 15 (Shuteit River), 20 (Pashmshurun), and 21 (Damavar) were not found on the maps, but, according to data furnished by the author, as well as his itinerary, or that of Koelz, they are at or near the given positions.

OENANTHE HISPANICA

The eastern race (*melanoleuca*), which replaces nominate *hispanica* in southeastern Europe, Asia Minor, the Near East, and

Persia, is more heavily pigmented. In the males of *melanoleuca* there is more black on the forehead and sides of the head, and in the black-throated phase the black extends farther down. Above, both sexes are darker in *melanoleuca*, brownish or grayish brown instead of sandy or buffy, and in worn plumage the males of *melanoleuca* have a whiter crown and mantle, many of my specimens being virtually pure white.

Examination shows that there are no differences in coloration between specimens in comparative plumage taken from the middle of March to the middle of September in southeastern Europe, Asia Minor, Palestine, the Caucasus, Transcaucasia, and southwestern and southern Persia. In Persia, according to Zarudny and Härms (1926, p. 22), *melanoleuca* also breeds in suitable localities in Gilan along the southern Caspian and has been observed in Azerbaijan along the middle Araxes.

Although both phases seem to be about equally represented in southeastern Europe, my specimens show that in Asia the black-throated phase outnumbers the white throated by a little less than two to one. In the adult males and males in first winter plumage that I have examined and in Stresemann's specimens from Macedonia (1920, Avifauna Macedonica, p. 167), these ratios are:

THROAT COLOR IN MALES OF *Oenanthe hispanica*

Region and Date	Total Males	Black Throat	Per Cent
Southeastern Europe			
March 19–September 4	11	6	54.5
Macedonia			
April 8–September 4	23	12	52.0
Palestine			
March 11–September 9	24	15	62.5
Persia			
March 28–September 15	39	25	64.0

I have only one specimen each from the Caucasus and Transcaucasia; the Caucasus bird has a black throat and the one from Transcaucasia a white throat.

The winter migrants that come through Egypt divide in about the same ratios as my Asiatic specimens. According to Meinertzhagen (1930, p. 268), out of 68 Egyptian specimens that he has examined, 42, or 62 per cent, had a black throat, and 26, or 38 per cent, a white throat.

Unfortunately I cannot compare the females as I have too few specimens taken outside of Persia during the breeding season.

But apparently white- or clear-throated females are also more abundant in southeastern Europe than they are in Asia. In Stresemann's 15 females from Macedonia (*loc. cit.*), nine had a completely white throat, and the others had it more or less blackish. In my 14 Persian females, only one has a really white throat, in four it is more or less whitish, and in the others it is darkish, one of these having the throat almost as black as in the male. In two females from southeastern Europe, one has a whitish throat and in the other it is a little dusky. Two from Asia Minor (no further locality) have a whitish throat, and two from Palestine a dark one. The degree of darkness, of course, is affected by wear, but I have judged it on the whole feather.

A point of interest mentioned by Ticehurst (1927, Ibis, p. 68) is the really great amount of variability in the amount of black and white on the tail. In my male specimens, whether from Europe, Palestine, or Persia, the black on the four outer pairs of rectrices varies from a full third in all the four outer feathers to specimens in which there is only a trace or no black at all. In these white-tailed specimens the outer pair has a more or less short, vertical, black stripe on the outer web. The variation is also highly irregular, one side of the tail having more black, or white, than the other.

MOULT AND PLUMAGE: As mentioned in the "Handbook of British birds" (1938, vol. 2, p. 158), it is very difficult to distinguish some females of *O. h. melanoleuca* from some females of *O. pleschanka*. It is not difficult if the specimen is adult and in fair plumage, but I confess that if the specimen is very worn and perhaps a juvenal at that, it is only after pondering for long over a large series that one can reasonably be sure. Immatures are even worse and cannot be identified with any degree of certainty. I am fortunate, however, in having immatures collected together with the parent, and I find that in *melanoleuca* the immature is very slightly browner and more rufous above and has perhaps a slightly greater amount of brown on the breast than in immature *pleschanka*.

Males in first winter plumage are like the adults but browner, not black, and in the black-throated phase have the black feathers of the throat more or less concealed by long buffy tips. Some of these males in first winter plumage apparently can breed, for in two mated pairs collected by Koelz on April 10 at Dastarjin in Fars, and May 5 at Damavar in Bakhtiari, the males, although

TABLE 4

MEASUREMENTS, FULLY ADULT SPECIMENS ONLY

	Wing	Tail	Bill
Southeastern Europe (worn)	11 ♂ 88.0–95.0 (91.80)	11 ♂ 55–64 (58.50)	11 ♂ 15.5–18.5 (16.90)
Palestine			
(Worn)	14 ♂ 86.5–95.0 (90.20)	14 ♂ 57–63 (59.80)	19 ♂ 16.0–18.5 (16.85)
(Fresh)	6 ♂ 89.0–95.0 (91.20)	6 ♂ 58–64 (60.50)	
Persia (worn)	19 ♂ 89.0–95.5 (92.00)	20 ♂ 56–64 (59.75)	30 ♂ 16.5–18.5 (17.60)
(Fresh)	10 ♂ 91.0–96.5 (93.65)	10 ♂ 58–66 (61.60)	
(Worn)	14 ♀ 85.5–95.0 (89.50)	13 ♀ 53–61 (57.30)	12 ♀ 16.5–18.5 (17.50)

their gonads were in breeding condition, were still in first winter plumage.

Koelz collected only two moulting specimens. One, an adult male taken on August 19 at Durud in Luristan, was still showing a very few traces of a complete moult, and the other, an adult female taken on May 5 at Damavar in Bakhtiari, was moulting the whole tail. This last date seems to be early, for none of my other May specimens had begun to moult. I have no specimen from June 4 to August 19, but, judging by the August 19 specimen, the moult probably takes place from the end of June to the beginning of August.

OENANTHE PICATA

Stresemann (1925, Ornith. Monatsber., vol. 33, pp. 178–181), supported by Grote (1942, Ornith. Monatsber., vol. 50, pp. 133–134), has shown that *picata*, *capistrata*, and *opistholeuca* are most probably color phases of a single species, by name *picata*. This has been strongly questioned by Ticehurst (1922, Ibis, pp. 151–155; 1927, Ibis, p. 73) who maintains that the three are separate species. I have examined the Koelz specimens together with those in the collection of the American Museum of Natural History, and although these specimens add no conclusive data, they offer no evidence to support the contentions of Ticehurst.

Ticehurst's contentions are based on differences in the pattern of the males and in the coloration of the females, an alleged difference in average size between *picata* and *capistrata*, plus the fact that the three phases are irregularly distributed.

The difference in size is emphasized by Ticehurst, but although he tells us that he has measured "over 60 of each" *capistrata* and *picata*, he fails completely to tell us what the seemingly all important difference in average is. Meinertzhagen (1938, Ibis, pp. 685–687), who has also studied this question, states, "I cannot accept Ticehurst's contention that there is any appreciable difference in measurements." Unfortunately most of my specimens of *capistrata* and *opistholeuca* are moulting, and those that are not are few. However, as far as my measurements go, they fail to show a difference in size. The wing in fully adult males measures: *picata*, 28 specimens, 89–97 (92.3); *capistrata*, four specimens, 90.0–95.5 (92.8); *opistholeuca*, six specimens, 92–96 (93.2).

The irregular distribution of my specimens is shown in figure 2. The specimens are all males collected during the breeding season,

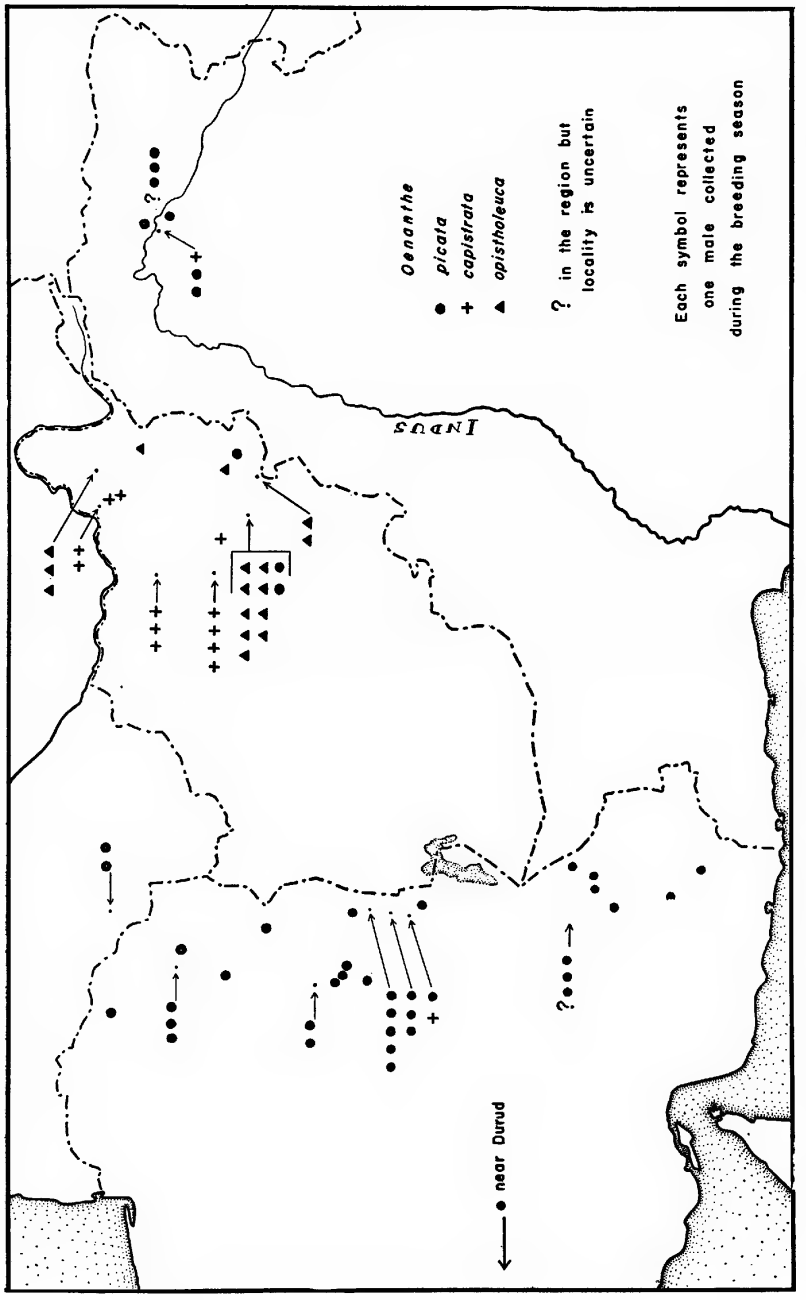

FIG. 2. Distribution of male specimens of the three color phases of *Oenanthe picata* during the breeding season in eastern Persia and in Afghanistan and Kashmir.

and to these I have added the males also collected during the breeding season by Meinertzhagen (*loc. cit.*). I do not have specimens from Ferghana and the Pamirs, but a map of breeding specimens for this region would show a mixture of *capistrata* and *opistholeuca*. This irregular distribution is no argument against conspecificity, and is in fact just what one would expect in a polymorphic species.

In view of the well-known and common striking dimorphism in the genus *Oenanthe*, differences in the pattern of the plumage of the males are not particularly convincing. Ticehurst may be aware of this for he emphasizes that there are also "very distinct differences" in the plumage of the females. As I do not have a representative series of females from the different parts of the range, I quote the descriptions of Ticehurst (1922, p. 153) and Meinertzhagen (1938, p. 685). Ticehurst says that "in *picata* the adult has a blackish throat, not quite as pure as in the male, but still distinctly dark; *capistrata* has a fulvous throat. In *picata* the back is very dark, in some almost black, in others blackish brown; in *capistrata* it is rather a sandy brown." Meinertzhagen says, "If I have interpreted dried skins correctly . . . in *picata* the female is dull black on the throat and upper breast, dirty white on the abdomen, with a sharp colour-contrast between the two. In *capistrata* the throat and upper breast are dull russet-brown, whilst in *opistholeuca* the underparts are sooty-brown, sometimes to the abdomen, but never with a sharp dividing line between the white of the under tail-coverts and the sooty of the breast."

I find, however, that there is a very high degree of individual variation. For in 20 females collected during the breeding season in eastern Persia (the only region from which I have sufficient material, and where, according to the numerical distribution of adult males as shown in figure 2, all, or virtually all, the females should be *picata*) there is a complete gradation in the coloration of the back, throat, and upper breast, ranging from specimens in which the throat is dull black to others in which it is dirty white or brownish. In the specimens with pale throats and breasts there is often no contrast between the coloration of these parts and that of the abdomen. On the back the variation runs from blackish to blackish brown to sooty gray and dingy ashy gray.

As Meinertzhagen says, the polymorphism of the males may also apply to the females. In any case variations in coloration and

irregular distribution are not valid arguments against the conspecificity of *picata*, *capistrata*, and *opistholeuca*.

MOULT: Moulting specimens have been examined from Persia, Afghanistan, and Kashmir. The moult may start early, for an adult male in *picata* plumage from Persian Baluchistan is already starting to moult the secondaries on May 31, but the majority of the specimens in full moult are July and August specimens from all three regions. In adults the moult is complete. In juvenals it is partial, involving only that of the body plumage, and in my specimens takes place at the same time as that of the adults. In all three phases the plumage of the first winter male is similar to that of the adult except that the black is duller and the greater wing coverts, primary coverts, and tertials are edged with brownish.

RELATIONSHIPS

Stresemann (*loc. cit.*) considers that *picata* is closely related to a group of forms which he calls the *lugubris* group and in which he includes *lugentoides*, *lugubris*, and *schalowi*. To this group he joins *picata*, the connecting form being *lugentoides*. I, however, cannot follow this arrangement, as I believe that *picata* is only distantly related to these forms and may represent an isolated species. Examination also shows that *lugentoides* is much closer to the races of the *lugens* group (nominate *lugens*, *halophila*, and *persica*) than it is to *lugubris* and *schalowi*.

Stresemann's reasons were based on a similarity in wing formula, the second primary being shorter than the sixth, and the fact that the *opistholeuca* phase of *picata* has the belly black as in *lugubris*.

The last reason is not conclusive. Black or white bellies occur as color phases in both *lugubris* and *picata*. Black versus white bellies seem to be but another instance of the polymorphic tendency common throughout the genus, since other species not related to one another repeatedly show alternate patterns, such as a black versus a white crown, or a black versus a white throat. The statement that *lugubris* is dimorphic requires amplification, as hitherto this form has always been assumed to be black below. I find, however, that in the collection of the American Museum of Natural History adult males from the Abyssinian highlands, which are otherwise identical, have either a black or a white belly.

The wing formula can be equally misleading. It is true that in *picata*, *lugentoides*, *lugubris*, and *schalowi* the second primary is shorter than the sixth, but the wing tip of *picata* is not shaped like that of the other three. It is more pointed, and the second primary, the fifth, and especially the sixth are proportionately shorter and hence do not reach so closely towards the level of the tips of the third and fourth However, the shape of the wing tip alone may not be significant, for in *lugentoides*, *lugubris*, and *schalowi*, where it is similar, other differences, such as the coloration of the inner webs of the wing feathers, rump, tail coverts, and sides of the tail, separate *lugentoides* from *lugubris* and *schalowi*.

These last characters also separate *picata* from *lugentoides* by the fact that the inner webs of its wing feathers are dark instead of partly white; from *lugubris* and *schalowi* by the fact that its rump, upper tail coverts, and sides of the tail are white instead of orange brown.

Equally important, or perhaps more so, is the fact that *picata*, instead of moving in the fall to Arabia and Africa, follows a totally different route, migrating only to India.

OENANTHE LUGENS

Three races can be recognized: nominate *lugens* Lichtenstein, 1823 (type locality, "Nubia"), *halophila* Tristram, 1859 (type locality, Algeria), and *persica* Seebohm, 1881 (type locality, Shiraz in Fars, southern Persia). Härms (Zarudny and Härms, 1926, p. 40) has described the population of Persian Baluchistan as *sarudnyi* (type locality, the region of Sarhad), but my examination shows that this name must be made synonymous with *persica*, as the birds of Persian Baluchistan are not separable from those of southern and southwestern Persia.

According to Meinertzhagen (1930, pp. 270–271), nominate *lugens* ranges from Damascus south through Palestine, Transjordania, southern Sinai, Egypt along the upper Red Sea as far as Quseir, and along the Nile, mostly on the east bank, as far as Aswan; *halophila* from Cyrenaica and Tripoli to the northern Tunisian and Algerian Sahara. My study and the records of Zarudny (Zarudny and Härms, 1926, p. 39) show that *persica* is found only in southern Persia, from the southwest (eastern Luristan) through Fars in the south into Persian Baluchistan in the southeast. In winter, Meinertzhagen (*loc. cit.*) says that nominate

lugens may wander across the Nile and that *persica* has been found in Egypt and northern Sudan; Zarudny and Härms (*loc. cit.*) say that this latter migrates to Arabia, where Bates (1936, Ibis, p. 705) says it arrives late but leaves early, no specimens being seen after February.

The sexes can be alike, as in nominate *lugens*, slightly different as in *persica*, where the black of the throat and mantle averages a little browner than in the males, or quite different, as in *halophila*, where these parts are grayish brown instead of black.

In the adult males the distribution of the pigment, or its intensity, varies from race to race. The parts affected are the under tail coverts, crown, inner web of the wing feathers, and the black spots at the tip of the tail. This variation is described below.

The material that I have used consists of a large series of both sexes of *halophila* from Algeria and Tunisia, a series of *lugens* from Syria, Palestine, and Egypt, the series collected by Koelz in southwestern and southern Persia, and a small series collected by Zarudny in Persian Baluchistan. This last consists of five specimens, two of them immature, and three adult males, of which one was collected on September 12, and the other two at the type locality (Sarhad) on May 29–31.

Variation in the Coloration of Adult Males

To avoid repetition, it may be stated that in every color character the three adults from Persian Baluchistan are identical to the specimens from southern and southwestern Persia, and that the specimens of nominate *lugens* as a series are, with the exception of the amount of white on the wing, intermediate between the specimens of *halophila* and *persica*. They are also intermediate in the length of the wing.

In the specimens from Algeria and Tunisia (*halophila*) the under tail coverts are palest—very pale—and these specimens also have the whitest and purest crown, the under tail coverts and the crown being darkest in the specimens from southwestern and southern Persia (*persica*). While the difference is well marked between *halophila* and *persica*, it is not very clear cut between *lugens* and *halophila* on the one hand and *lugens* and *persica* on the other. A quarter of the 12 specimens of *lugens* (three in the case of the crown and four for the under tail coverts) have these parts indistinguishable from those of *halophila*, and a similar proportion

(four for the crown and three for the coverts) have these parts as dark as in *persica*.

In the case of the size and shape of the black spots at the end of the tail, these spots are, despite a certain amount of individual variation, smallest in *halophila*, largest in *persica*, and, as stated, *lugens* is intermediate.

In the case of the wing feathers, however, the variation is quite different. This time it is the geographically intervening *lugens* that shows the most white. The white area is the most developed, and in the majority of the specimens reaches the shaft, whereas it falls considerably short in all the specimens of *halophila* and *persica*, the white area being smallest in *persica*.

SIZE: The measurements are given in table 5.

TABLE 5

MEASUREMENTS OF ADULT MALES IN *Oenanthe lugens*

Race and Region	N	Wing	Tail	Bill
halophila				
Algeria, Tunisia	27	87.0–94.0 (90.55)	53–60 (57.80)	18.5–21.0 (19.40)
lugens				
Syria (1), Palestine (7), Egypt (4)	12	88.5–98.0 (93.40)	54–66 (59.25)	18.0–21.0 (19.20)
persica				
Luristan (4), Fars (5)	9	93.5–99.0 (95.27)	57–63 (59.90)	18.5–21.0 (19.30)
lugentoides				
Southwestern Arabia	10	86.0–89.0 (87.90)	51–59 (55.90)	18.0–20.0 (19.20)

Härms (Zarudny and Härms, 1926, p. 40) separated the population of Persian Baluchistan as *sarudnyi* solely on the basis of being "strikingly" larger, and, as I have stated, there are no color differences. Härms' five males from Persian Baluchistan measured for the wing: 97, 97, 98, 99.5, 100 (98.30), as against 92.5–95.3 (93.8) in his seven males from Luristan. In the case of the tail Härms' measurements are, respectively, 67.2–73.0 (70.8), and 66.6–69.0 (67.35). These differences are not striking, particularly when my nine specimens from Luristan and Fars, which have a wing length of 93.5–99.0 (95.27), are compared to my three specimens from Persian Baluchistan in which the wing measures

94 and 98.5 in the topotypes of *sarudnyi* and 97 in a specimen from Bid.

It is hard to account for the tail measurements of *persica* and *sarudnyi* given by Härms. The specimen from Bid, however, suggests that the discrepancy between his measurements and mine is due to a personal factor. This specimen appears to be the same one used by Härms, as Zarudny collected for only a part of one day at this locality, on August 31, 1898 (corrected to September 12 by Härms to conform with our calendar). I find it has a tail of only 59 mm. and not 67.2 as stated by Härms. The two topotypes have a tail of 59 and 61 mm., and, although Härms gives the tail measurement in his birds from southwestern Persia as 66.6–69.0, I have found none with a tail that measured more than 63 in Luristan and 60 in Fars.

The size of Härms' and my samples may not be sufficient. But since the measurements overlap completely, or virtually do so, and fail to show a significant difference in average, I believe that the birds of Persian Baluchistan are not separable from those of southern and southwestern Persia.

It could be objected that some of the specimens collected by Koelz in Fars during March could possibly have been migrants on their way to Persian Baluchistan. However, these March specimens are labeled "mated" or "nesting," and we know from Zarudny and Härms (1926, p. 39) that the species returns and breeds early. In Luristan Zarudny observed its return from February 29 to March 10 and March 13–25, and on April 6–8 in the same region he observed and collected females that were already brooding their young (all dates corrected to our calendar by Härms).

MOULT: The only moulting specimens collected by Koelz are juvenals of both sexes taken from August 21 to September 10 in Luristan. Only a few traces of a partial moult involving only the body feathers remain.

THE SUPERSPECIES *lugens*

In table 5 I have included the measurements of *lugentoides* because examination has convinced me that this form is very closely related to the races of the *lugens* group (nominate *lugens*, *halophila*, and *persica*). I have made it conspecific with these races but placed it in a separate group, in a superspecies the name of which is *lugens*. In this superspecies I include *lugubris* as a

separate species. This treatment differs from that of Stresemann (1925, Ornith. Monatsber., vol. 33, p. 181) who, on the basis of having a different wing formula, separates *lugentoides*, *lugubris*, and *schalowi* from the races of the *lugens* group and places them in a group (*lugubris*) in which he also includes *picata*. However, as I have stated in my discussion of this last form, I believe that *picata* is an isolated species, without close affinities to either *lugentoides* or *lugubris* and *schalowi*.

In *lugentoides*, *lugubris*, and *schalowi* the second primary is shorter than the sixth, whereas the reverse is true in the races of the *lugens* group. However, this difference and the less pointed, shorter, and more rounded wing of *lugentoides*, *lugubris*, and *schalowi* are easily accounted for, I believe, by the fact that the races of the *lugens* group are migratory, whereas the other three are tropical, non-migratory forms.

Bates (1936, Ibis, p. 706) believes that *lugentoides* is very different from the races of the *lugens* group, his main contention being (in addition to some presumed structural differences other than the shape of the wing) the sexual dimorphism in *lugentoides*. He states, "the sexes [in *lugentoides*] are totally different in colour, the female not merely as in *halophila* a very faded-looking copy of the male, but having no adumbration of pattern like the male." However, my long series of *halophila* shows that in female *halophila* the male pattern (blackish throat and sides of the face, all the females having a brown back) is not a very stable character. In 31 female specimens of *halophila* labeled adult or appearing to be adult, the variation in the presence or absence of the male pattern is as follows:

With pattern	11 specimens
Without pattern	7 specimens
Intermediate (showing a trace of pattern)	13 specimens

No one can seriously question the close relationship of *halophila* to nominate *lugens* or *persica*, but in this one group alone sexual dimorphism is just as striking as the sexual dimorphism in *lugentoides*. It varies from nominate *lugens*, in which the sexes are identical, through *persica*, in which the female is a little browner, to the numerous female specimens of *halophila*, which are as "totally different in colour" from the males of *halophila* as the females of *lugentoides* are from the males.

The structural differences mentioned by Bates as separating *lugentoides* from the races of the *lugens* group are that "*Oe. lugen-*

toides is a rather heavy Wheatear, as its strong bill and particularly its strong feet show." As the measurements in table 5 show, *lugentoides* does not have a longer bill, and comparison fails to show any difference in shape. If the feet of *lugentoides* are compared only to those of *halophila*, as Bates may have done, it is true that the feet of *lugentoides* are a little stronger. However, the feet in nominate *lugens* are a little stronger than in *halophila*, and they are still stronger in *persica*, there being no difference between the feet of this latter and those of *lugentoides*, rather, if anything, the feet of *persica* are slightly stronger.

A character that may be of some significance is the presence in *lugentoides* of a white mirror on the inner webs of the wing feathers. This character varies very little within each race of the *lugens* group. In male *lugentoides* this white area is very well developed and, although more reduced in the female, is as large as, or slightly smaller than, in female *persica*.

The migratory movements may also be of significance, *persica* migrating back to what is perhaps the ancestral center in Arabia and Africa.

I then go back to Meinertzhagen's original treatment (1924, Ibis, p. 630) but I modify his arrangement as follows:

SUPERSPECIES *lugens*

A. *lugens* group
   O. lugens halophila, Algeria to Cyrenaica
   O. lugens lugens, southern Syria to eastern Egypt
   O. lugens persica, southwestern to southeastern Persia

B. *lugentoides* group
   O. lugens lugentoides, Yemen and western Aden
   O. lugens boscaweni, Hadhramaut

C. Species *lugubris*
   O. lugubris lugubris, mountains of Eritrea, Abyssinia, and British Somaliland
   O. lugubris schalowi, highlands of Kenya and neighboring Tanganyika

This arrangement seems to represent best the relationships of the various forms.

I have placed *lugentoides* in a separate group because, as Stresemann remarks (*loc. cit.*), in this form the posterior border of the crown is cut off more sharply, the whitish color not extending so far back. This difference presumably applies also to *boscaweni*, a form from the Hadhramaut described by Bates (1937, Bull. Brit.

Ornith. Club, vol. 58, p. 32) as being like *lugentoides* except for the crown which is white without dark shaft streaks.

Oenanthe lugubris is made a separate species. Although in some characters its females, particularly in *schalowi*, are very similar in appearance to those of *lugentoides*, other characters in both female and male show that it is farther removed. The differences consist in a lack of white on the inner webs of the wing feathers, and in the coloration of the rump, upper tail coverts, and sides of the tail, which are orange brown in *lugubris* instead of white.

OENANTHE FINSCHII

The separation of this species into a western and an eastern race has been questioned. Ticehurst (1927, Ibis, p. 71) has shown, however, that in the majority of cases, specimens from the eastern part of the range (*barnesi*, type locality, Kandahar), can be separated from those of the west (nominate *finschii*, type locality, Syria, according to Meinertzhagen, 1930, p. 273). The western race is smaller, the males are whiter on the breast and abdomen and have paler under tail coverts, and the females are very slightly paler and grayer and almost always have blackish or dusky throats lacking in eastern specimens.

This separation is now accepted, but the status of the intervening populations (Persia) is still not too clear. This is probably owing to the fact that the Persian populations are intermediate, on a cline of increasing size running from west to east.

The measurements of fully adult males are shown in table 6. Specimens with brownish quills and with the secondaries and primary coverts conspicuously margined with buff are not included as these are first winter birds. Bill measurements are similar.

In table 6 my measurements of specimens from eastern and southwestern Persia are similar, but the measurements given by Zarudny and Härms (1926, p. 30), who had a larger series from western Persia, show that the birds from this region are smaller than those of eastern Persia. The difference between the birds of southwestern Persia and those of Palestine and Cyprus is distinct, and on this basis alone one might be inclined, as some authors have been, to refer the populations from southwestern Persia to *barnesi*. However, I find that my male specimens in comparative plumage from southwestern Persia are identical in

coloration with the specimens from Cyprus and Palestine; they are white on the breast and have very pale, almost white, under tail coverts. On the other hand, my specimens from eastern Persia are virtually identical to the specimens from Afghanistan; they are only very slightly paler, but the difference between these specimens from eastern Persia and those from southwestern Persia is distinct and constant.

TABLE 6

MEASUREMENTS OF FULLY ADULT MALES IN *Oenanthe finschii*

Region	N	Wing	Tail
Cyprus	9	86.0–92.0 (89.80)	53.0–58.0 (55.30)
Palestine	5	85.0–92.0 (87.60)	52.0–58.0 (54.50)
Southwestern Persia	9	90.0–96.5 (92.10)	58.0–67.0 (60.70)
Western Persia[a]	25	87.0–94.0 (89.50)	61.0–68.4 (64.60)
Eastern Persia	14	89.0–96.0 (92.40)	58.0–64.0 (60.20)
Eastern Persia[a]	9	88.0–96.0 (91.70)	64.1–71.0 (66.60)
Afghanistan	9	91.0–96.5 (94.30)	58.0–65.0 (62.70)

[a] Zarudny and Härms (1926, Jour. Ornith., vol. 74, p. 30).

I have only three females from southwestern Persia, and two of these have a dusky gray throat, though the throat is not so dark as in specimens with a dusky throat from Cyprus and Palestine. One female from southwestern Persia examined by Paludan (1938, Jour. Ornith., vol. 86, p. 615) also had a dark throat. In specimens from eastern Persia only one has a dusky throat, and in Afghanistan all the specimens have a whitish throat. This variation, in the specimens that I have examined, is illustrated below:

THROAT COLOR IN FEMALES OF *Oenanthe finschii*

Region	Blackish	Dusky	Whitish
Cyprus and Palestine	2	6	1
Southwestern Persia	0	2	1
Eastern Persia	0	1	9
Afghanistan	0	0	8

I believe therefore that the birds which in Persia breed in the Zagros from Kermanshah to Fars should be referred to nominate *finschii*. I have not examined specimens from northwestern Persia and the region south of the Caspian, but I would expect the

populations from these regions to be closer also to nominate *finschii*. South of the Caspian the break seems to occur, as in so many other instances, in the region of Gurgan; a male specimen from this region taken on July 28 was identified as *barnesi* by Stresemann (1928, Jour. Ornith., vol. 76, p. 384.)

MOULT: The moult probably starts towards the end of June, and in the majority of the specimens that I have examined was over by the middle or end of August, only a very few last traces still showing on a first year male taken on August 15 and an adult female taken on August 27, both in Afghanistan. I have, however, seen an adult male from eastern Persia taken on August 31 in which the moult, although well advanced, was still a good way from being over. In another male from this region taken on July 29 it was almost over. In adults the moult is complete, but in first year birds it is partial, only the body feathers being replaced.

RELATIONSHIPS

Oenanthe finschii is not too far removed from *Oenanthe deserti*. The two species may be considered a species group.

OENANTHE DESERTI

Ticehurst (1922, Ibis, pp. 155–158) and Zarudny and Härms (1926, pp. 14–19) have shown that there are two distinct races in western Asia. One (*oreophila*, type locality, southwestern Tibet) is larger and has more white on the inner webs of the wing feathers, the white area reaching the quill on the second primary. This race, which seems to be found only at the higher altitudes, breeds from Chinese Turkestan through Tibet and northern Kashmir to the Pamirs in the west. The other (*atrogularis*, type locality, "Northern Provinces, Sind," = Agra in United Provinces, according to Stuart Baker) breeds in northern Mongolia, Russian Turkestan, Transcaspia, Persia, and southeastern Caucasus to the Kirghiz steppes. In winter both pass through Afghanistan, *oreophila* migrating to Persia (Seistan, Persian Baluchistan, and southern Persia), some migrants that I have examined reaching Socotra Island; *atrogularis* migrating chiefly to the plains of northern and western India, though part of the migration goes to Arabia and the Sudan, while still a third winters in Seistan and Persian Baluchistan.

I have examined two widely separated breeding populations, one from eastern Persia (mainly Khorasan) and the other from Kashmir (Ladak, Zanskar, and Rupshu), and while both are identical in general coloration, the differences in their other characters (long wing and large white area in *oreophila*, short wing and small area in *atrogularis*) are unmistakable.

The population from Afghanistan appears to be intermediate through a combination of these characters. It has the long wing of *oreophila* and the small white area of *atrogularis*.

The breeding of this species in Afghanistan is questioned by Whistler (1944, Jour. Bombay Nat. Hist. Soc., vol. 45, p. 64), since all his records are from the period of migration. The first actual breeding record for the country is provided by some of the specimens collected by Koelz.

These breeding specimens consist of three immature and an adult female collected in the northeast on July 27–29 and an adult male taken at the Sabz Pass on August 28. Both the adults are moulting. The old wing feathers in the female are very worn and the new ones just coming in. As far as I can tell the white area is very restricted, as in *atrogularis*. In the male, which is in the last stages of the moult, the white area is typically small, identical in size to that of breeding specimens of *atrogularis* from eastern Persia, but it appears that the bird would have had a long wing, the primaries, which are not yet quite fully grown, already measuring 95 mm.

The evidence of these two specimens is insufficient, but the characters of the large series collected from September 20 to November 8 are very suggestive. Although I cannot be sure that these birds had bred in Afghanistan, I find that they have a long wing and a small white area. If only fully adult males in which the racial characters are best shown be taken, 11 males have a wing length of 97–105 (100.6); nine breeding males of *oreophila* from Kashmir, 99–104 (100.6); 16 breeding males of *atrogularis* from eastern Persia, 91–96 (94.0). In the 11 males from Afghanistan only two have the white area as large as in *oreophila*, one is more or less intermediate, and in the other eight the extent of the white area is identical to that of the specimens of *atrogularis*.

Whistler (*loc. cit.*) also found that a male from Afghanistan "was intermediate in character as regards both wing length (99 mm.) and amount of white on the primaries but on the whole it is nearer to this subspecies [*oreophila*]." But this specimen, taken

on October 19, as well as the other specimens listed by Whistler, was collected outside the breeding season.

Until an adequate series of breeding specimens can be examined, I believe that, rather than naming a new race, the birds of Afghanistan should be referred to *oreophila*.

In another part of the range where the two races come in contact the local populations are also intermediate, apparently again through a combination of characters which, however, is the reverse of that of Afghanistan. Hartert (1935, Die Vögel der paläarktischen Fauna, Ergänz., p. 311) states that in the eastern Tian Shan, Gobian Altaï, and surrounding parts of Mongolia the birds are "distinctly intermediate"; they have the strong development of the white area of *oreophila*, but they are smaller.

The specimens collected by Koelz during the winter in southern Persia show the same combination of characters as do the specimens from Afghanistan. Five adult males from this region measure 98.0–101.5 (99.4). In specimens taken in winter in Seistan from October 27 to February 10, adult males in which the distinction is clear, measure: with large white area, 97–102 (99.6); with small white area, 92–97 (95.0).

In the list of specimens, given at the end of the paper, I have listed all the Koelz winter specimens from southern Persia under *oreophila*. The only specimens listed under *atrogularis* are those from southwestern Persia (Luristan), northern Iran (Karaj), and Khorasan. All are unmistakably *atrogularis*, and winter visitors taken at Quetta in Baluchistan and in Sind from November 26 to December 7 also appear to be *atrogularis*.

MOULT: In addition to the moulting specimens from Afghanistan mentioned above, I have seen specimens of *atrogularis* taken from June 28 to July 25 in eastern Persia, and some of *oreophila* taken from July 5 to July 28 in Ladak and Rupshu. All were adults and in full moult. I have seen no moulting juvenal specimens.

OENANTHE ISABELLINA

This species has been thoroughly studied by Grote (1937, Ornith. Monatsber., vol. 45, pp. 114–115, 123–130). Although this paper is chiefly concerned with distribution and ecology, Grote states that, despite the large amount of material examined, he has been unable to find evidence of racial formation.

Apparently the species does not vary geographically, or varies so

slightly that only one attempt at racial separation has been made. This was by Koelz who has described the birds of northeastern Afghanistan as *kargasi*, type locality Kargasi Pass (1939, Proc. Biol. Soc. Washington, vol. 52, p. 66). However, I find that this name is a synonym of *isabellina*, as examination of the type and original series fails to substantiate the validity of the characters indicated by Koelz.

The birds of northeastern Afghanistan are said to differ by their "heavier bill, longer tail, tarsus and toes, and deeper color." The type, an adult female, has a long tail which measures 61 mm. However, I have measured two other adult females collected during the breeding season at Durud in southwestern Persia in which the tail measured 62, 62, and in these specimens the apical white spots were a little more worn than in the tail of the type. The type is the only adult in the original series in which the tail is fully grown, the others being very badly worn or moulting. For the same reasons, the wing measurements, including that of the type, cannot be taken. The shape of the bill and its size and the size of the feet all fall within the range of variation of breeding females in populations from other regions in the range of the species. The length of the bill in female *isabellina* varies from 19 to 22, and in the specimens from northeastern Afghanistan the bill measures: 19, 19, 20, 20.5, 20.5, 21.5 (type).

The color difference mentioned by Koelz is probably due to the extreme freshness of his specimens, which are just finishing the moult of the body plumage. With wear, I believe they would undoubtedly have become paler. For instance specimens from eastern and southwestern Persia, adults as well as first winter, which no longer show any traces of moult by July 30 and August 26–30, are as dark as most of the specimens from northeastern Afghanistan, whereas in specimens taken in the same regions throughout September the color has begun to fade.

It is possible, however, that a slight amount of geographical variation may occur in the coloration of *isabellina*. Stegmann writes, according to Grote (1937, *ibid.*, vol. 45, p. 115) that specimens from the Transbaïkal region and Mongolia appear to be somewhat grayer and darker than specimens from Turkestan and western Siberia, but that this difference is very insignificant. I have been unable to find evidence of geographical variation in the specimens collected by Koelz and in those in the collection of the American Museum of Natural History.

MOULT: Some specimens moult early. I have an adult moulting on June 6 at Durud in southwestern Persia, and by July 30, in the specimen mentioned above, the moult had been completed. However, a July 27 specimen from northeastern Afghanistan is just starting, although, as stated, in the other specimens of the original series of "*kargasi*" the moult was far advanced by August 8–13 or in its last stages. In adults the moult is complete. Juvenals moult into first winter plumage at the same time as the adults, but their moult is partial, involving only the replacement of the body feathers and some of the wing coverts. The "Handbook of British birds" (1938, vol. 2, p. 165) states that the first winter plumage is like that of the adult. If already somewhat worn, it is true that specimens are indistinguishable, but if very fresh, during a short period (approximately from the end of July to early September) the light tips on the wing and tail feathers of first winter birds are distinctly broader and more buffy or ocher, but not whitish.

MEASUREMENTS: Koelz specimens (very fresh specimens that can be identified as first winter birds are not included): Wing: 36 males, 95–102 (99.50); 27 females, 92–103 (98.0). Tail: 38 males, 52–62 (55.55); 28 females, 52–62 (54.95). Bill: 39 males, 19–22 (20.50); 32 females, 19–22 (20.20).

One additional female has a wing of 105 and one additional male, 109. Grote (*loc. cit.*) cites that one male measured by Moltschanow and Zarudny had a wing of 111 mm.

OENANTHE MONACHA

This Wheatear is not common and my comparative material is scanty, but apparently this species does not vary geographically as no races have ever been separated. Hartert lists *semenowi* as a synonym, stating that this form, described by Bianchi and Zarudny from eastern Persia (1900, Ann. Mus. St. Petersbourg, vol. 5, p. 187), is based on the freshly moulted female plumage.

Zarudny and Härms (1926, p. 51) state that in eastern Persia, *monacha* breeds only south of Seistan. However, it probably breeds farther north, as Koelz collected a series of moulting juvenals on September 1–3 at Robat i Khan on the borders of southwestern Khorasan. There are no actual records for Afghanistan; it undoubtedly breeds in southern Baluchistan, and has been taken in January at Sehwan in Sind according to Stuart Baker.

MOULT: The only moulting specimens seen are the series from Robat i Khan. All the specimens are moulting into first winter plumage, the moult being in its last stages or well advanced. The moult is partial, only the body feathers, lesser and greater wing coverts being replaced.

OENANTHE ALBONIGER

The species apparently does not vary. The specimens collected by Koelz were examined together with a large series collected by Zarudny during and outside the breeding season in various parts of eastern and southeastern Persia. All the specimens are very uniform.

The breeding range is rather limited, being chiefly southeastern Persia and Baluchistan. It also breeds in southern Persia, and in the southwest the breeding range extends as far as eastern Luristan, where, at Kulmahak, north of Dizful, Paludan (1938, Jour. Ornith., vol. 86, p. 616) collected a female in breeding condition on April 8. According to Zarudny and Härms (1926, p. 50), it nests in this region but not every year. In eastern Persia Zarudny and Härms state that it nests as far north as Bamrud, or a little to the south of latitude 34° N.

There are no actual breeding records for Afghanistan, as all the specimens collected so far have been taken outside the breeding season. However, since Ticehurst (1926, Jour. Bombay Nat. Hist. Soc., vol. 31, p. 706) reports that it breeds in northern Baluchistan, it probably breeds also in southern Afghanistan. All the specimens collected by Koelz in this region were taken from October 17 to November 24 and may have been migrants.

It apparently breeds in Sind as I have examined a specimen from Sukkur. Unfortunately this specimen is undated, but it is moulting, and all the other moulting specimens that I have seen were collected on their breeding grounds in southeastern Persia by Zarudny from the end of June to the middle of July, and by Koelz in eastern Persia on August 18.

In winter the species is found in the same regions as during the breeding season but apparently goes farther west in southwestern Persia, is also found in Seistan where it does not breed, and some specimens reach Kashmir and Sind. I have seen a specimen dated January 10 from Gilgit.

MOULT: The only moulting specimens examined were adults, male and female, which in addition to the undated specimen from

Sind were collected, as stated, from June 26 to July 18 by Zarudny and August 18 by Koelz. The moult is complete and in its last stages in the July and August specimens. Specimens from the end of May and the first few days of June are in very worn condition and had not started to moult.

MEASUREMENTS: Specimens collected by Koelz and Zarudny during the breeding season or on the breeding range (Fars, southern Iran, Laristan, Kirman, Khorasan, and Persian Baluchistan): Wing: 23 males, 100–107 (103.80); 15 females, 95–104 (99.20). Tail: 23 males, 62–70 (65.30); 15 females, 58–68 (62.70). Bill: 22 males, 20–22 (21.10); 15 females, 19.5–21.5 (20.60).

OENANTHE LEUCOPYGA

The range of this species is from the Algerian Sahara to the Sinai Peninsula and Palestine. The only record for Persia (Zarudny and Härms, 1926, p. 48) is a single specimen collected on March 9, 1904, on the lower Karun River in southwestern Persia.

LIST OF THE SPECIMENS COLLECTED BY WALTER KOELZ
(Subad. Signifies Specimens in First Winter Plumage)

Oenanthe xanthoprymna chrysopygia de Filippi

PERSIA: Kermanshah: Kermanshah, December 25, 1940–January 13, 1941, 2 ad. ♂ (*"cummingi"*), 2 ad. ♀ ; Qasr i Shirin, January 1–4, 5 ad. ♂, 1 ad. ♀, 1 imm. ♀, 1 unsexed ad. Luristan: Garun, January 29–30, 2 ad. ♂; Durud, April 4, 1 ad. ♂, August 28, 1 imm. ♂, October 22–28, 1 ad. ♂, 3 ad. ♀, 1 imm. ♀ ; Khali Kuh, June 1, 1940, 1 ad. ♀ "laying." Fars: Persepolis, March 11–12, 2 ad. ♂. Laristan: Isin, December 17, 1939, 1 ad. ♂. Kirman: Saadatabad, December 23, 2 ad. ♂, 1 ad. ♀ ; Teserj, December 25, 1 ad. ♂; Madenu, December 27, 1 ad. ♂, 1 ad. ♀ ; Dehibala, January 6, 1940, 1 ad. ♀ ; Mohamedshah, January 8, 1 ad. ♂; 4 [*sic*] Farsakh, January 9, 1 ad. ♂, 1 ad. ♀ ; Chaharfarsakh, January 15, 1 ad. ♀. Iran: Cheshmaedozi, February 2, 1 ad. ♂, 1 unsexed ad.; Kondor, Kuh Pansar, October 5–12, 1944, 1 ad. ♂, 1 imm. ♂, 1 ad. ♀, 1 imm. ♀ ; Karaj, October 29, 1945, 1 ad. ♂, 2 ad. ♀. Khorasan: Shahrud, September 26–27, 1940, 1 ad. ♂, 2 ad. ♀, 1 imm. ♀.

Oenanthe xanthoprymna kingi Hume

AFGHANISTAN: Nozi, June 21, 1937, 4 ad. ♂, 1 imm. ♀ ; Tirgaran, July 19, 1 imm. ♂; Sanglich, July 26–27, 2 ad. ♂; Magnaul, July 29, 1 imm. ♀ ; Kandahar, October 24, 1 ad. ♀ ; Farah, October 30–November 9, 4 ad. ♂, 1 ad. ♀ ; Lorinj, August 26, 1939, 1 ad. ♂; Sabz Pass, August 29, 1 ad. ♂, 2 imm. ♀ ; Shanbashak, August 31, 1 ad. ♀ ; Tukzar, September 16, 1 ad. ♂; Bai, September 19, 1 ad. ♂; Safedsang, September 20–25, 2 ad. ♂.

BALUCHISTAN: Quetta, November 26, 1 unsexed ad.

INDIA: Sind: Soneri Lake, December 6–8, 2 ad. ♂, 1 ad. ♀.

Oenanthe oenanthe oenanthe Linnaeus

PERSIA: Fars: Persepolis, March 10–11, 1940, 2 ad. ♂; Jahrum, March 22, 1 ad. ♂; Niriz, March 28–29, 2 ad. ♂, 1 ad. ♀; Mujan Jangal, March 31, 1 ad. ♂. Luristan: Durud, January 26, 1941, 1 subad. ♂, March 13–April 24, 17 ad. ♂, 1 subad. ♂, 3 ad. ♀, 2 subad. ♀, August 17–September 1, 5 ad. ♂, 5 ad. ♀; Pariz, September 1, 1 ad. ♀. Bakhtiari: Gahar, June 1, 1 ad. ♂. Mazenderan (region of Gurgan): Shahkuh, July 16–20, 1940, 2 ad. ♂, 1 imm. ♂, 1 ad. ♀, 1 subad. ♀, 2 imm. ♀. Azerbaijan: Bustanabad, November 1, 1 ad. ♀; Ardebil, November 3–6, 2 subad. ♂, 2 ad. ♀; Namin, November 6, 2 subad. ♂, 1 ad. ♀, 1 subad. ♀; Livan, November 14–15, 4 subad. ♂, 1 unsexed ad. Iran: Karaj, November 2, 1945, 2 ad. ♀.

AFGHANISTAN: Sanglich, July 26–27, 1937, 2 subad. ♂, 2 ad. ♀, 1 imm. ♀; Lorinj Pass, August 27, 1939, 1 ad. ♂, 1 subad. ♂, 1 ad. ♀; Sabz Pass, August 28–29, 2 subad. ♂, 1 ad. ♀; Baligali Pass, August 30, 1 ad. ♂, 1 subad. ♂; Shanbashak, August 30–31, 1 subad. ♂, 1 ad. ♀; Binimang, September 1, 1 subad. ♂.

Oenanthe pleschanka pleschanka Lepechin

PERSIA: Southern Iran: Yezd, February 25, 1940, 2 ad. ♂; Isfahan, March 3, 1 ad. ♂. Fars: Eglit, March 8, 1 subad. ♂; Niriz, March 28–29, 3 ad. ♂, 1 subad. ♂, 1 ad. ♀ "laying"; Dastarjin, April 9, 1 ad. ♂. Bakhtiari: Ti, June 4, 1 imm. ♀. Mazenderan (region of Gurgan); Shahkuh, July 19, 1 imm. ♂. Khorasan: Bardu Forest, August 17–18, 2 ad. ♂, 2 subad. ♂; Bardu, August 21, 1 subad. ♀; Firdaus, August 29, 1 subad. ♂; Robat i khan, September 2–3, 3 subad. ♂, 1 ad. ♀, 1 subad. ♀; Shahrud, September 27, 1 ad. ♀. Luristan: Durud, March 4–21, 1941, 2 ad. ♂, 1 subad. ♂, April 16, 1 subad. ♂, May 26, 1 unsexed imm., June 9, 1940, 1 imm. ♀, July 19, 1941, 1 subad. ♀, September 9–17, 3 ad. ♂, 6 subad. ♂, 3 ad. ♀, 2 subad. ♀, October 31, 1 subad. ♂; Brujird, September 23–October 6, 5 ad. ♂, 2 subad. ♂, 1 ad. ♀. Northern Iran: Karaj, October 29–November 2, 1945, 5 subad. ♂, 1 subad. ♀.

AFGHANISTAN: (Breeding, worn plumage), eastern and northeastern Afghanistan: above Khudikhel "8000 feet," May 22, 1937, 1 ad. ♂; Gumandru, June 5, 1 ad. ♀; Farajghan Pass, June 6, 1 ad. ♂, 1 ad. ♀; Sirotai, June 17–18, 1 ad. ♀, 1 nestling ♂; Aq Bulaq, July 6, 1 imm. ♂; Gandacheshma, July 10, 1 ad. ♂; Sufian, July 18, 1 ad. ♂; Tapakaki Pass, August 11, 1 subad. ♂, 1 imm. ♂; Teshkan Pass, August 12, 1 ad. ♀; Tuti Pass, August 15, 1 ad. ♀; Rustak, August 17, 1 ad. ♀; Lala Maidan, August 26, 1 subad. ♂. North central Afghanistan: Dasht i Safed, August 23, 1939, 1 subad. ♂.

AFGHANISTAN: (After the breeding season and probable migrants, fresh plumage), north central Afghanistan: Aq Cha, September 8, 1937, 1 ad. ♂, 1 ad. ♀, October 27, 1939, 1 ad. ♀; Chigzar, September 10, 1 ad. ♂, 1 ad. ♀; Shibarghan, September 14, 1937, 1 subad. ♂; Dèh i Miana, September 17, 1939, 1 subad. ♂; Bai, September 19, 1 subad. ♂; Balkh, September 20, 1937, 1 subad. ♂; Safedsang, September 21–25, 1939, 3 ad. ♂, 2 ad. ♀, 1 unsexed subad.; Kotali Bedak, September 26, 1 ad. ♂, 1 subad. ♂; Zehnadir, September 26, 1 ad. ♀; Khami Deh, September 30, 1 subad. ♂; Alinji, September 30, 1 ad. ♂; Qala Shahar, September 30, 1 ad. ♂, 1 ad. ♀; Dukansha, October 4, 2 ad. ♂, 1 subad. ♂; Khwajaibichagalak, October 18, 1 ad. ♂. Southern Afghanistan:

Kandahar, October 17, 1937, 1 ad. ♂, 1 ad. [♀]; Kang, November 5, 1 ad. ♀; Farah, November 8, 1 ad. ♀.

INDIA: Northern Punjab: Gundla, June 9, 1936, 1 ad. ♂; Tandi, June 30, 1 ad. ♂. Kashmir, Baltistan: Skardo, August 12–13, 1 ad. ♂, 1 imm. ♂; Shigar, August 19–21, 1 ad. ♂ (*vittata*), 1 subad. ♂, 1 imm. ♂, 1 ad. ♀ (*vittata*), 1 ad. ♀, 1 subad. ♀; Dagoni, August 24, 1 ad. ♂, 1 subad. ♂; Kafalu, August 28, 1 ad. ♀; Surmo, August 28, 1 ad. ♂; Pranu, August 31, 1 ad. ♀.

Oenanthe hispanica melanoleuca Güldenstädt

PERSIA: Fars: Niriz, March 28–29, 1940, 1 subad. ♂, 2 ad. ♀; Dastarjin, April 8–10, 4 ad. ♂, 2 subad. ♂, 3 ad. ♀; Kotalipirzan, April 10, 2 ad. ♂, 2 subad. ♂, 1 ad. ♀. Bakhtiari: Pashmshurun, April 30–May 1, 2 ad. ♂, 1 ad. ♀; Damavar, May 4–5, 6 ad. ♂, 1 subad. ♂, 6 ad. ♀; Qalichir, June 4, 1941, 1 ad. ♀. Luristan: Garun, May 26, 1940, 1 ad. ♂, 1 imm. ♂; Kalvar, May 27, 2 ad. ♂; Durud, March 31–April 19, 1941, 1 ad. ♂, 2 subad. ♂, May 20, 1940, 1 ad. ♂, June 27, 1941, 1 imm. ♂, August 19–September 15, 10 ad. ♂, 1 subad. ♂.

Oenanthe picata Blyth

PERSIA: Luristan: Chamchid, June 6, 1940, 1 subad. ♂, 1 ad. ♀. Bakhtiari: Labisufed, April 27, 1 unsexed imm. Laristan: Isin, December 16–17, 1939, 1 ad. ♂, 1 ad. ♀. Kirman: Saadatabad, December 23, 1 ad. ♂; Teserj, December 25, 1 subad. ♂. Iran: Tomogaon, February 8, 1940, 1 subad. ♂. Fars: Niriz, March 29, 1 ad. ♀. Khorasan: Bardu and Bardu Forest, August 16–21, 1 ad. ♂, 2 subad. ♂, 5 ad. ♀, 1 subad. ♀, 1 imm. ♀; Turbat i Haidari, September 13, 1 subad. ♂. (All the adult and subadult, or first winter males, are in *picata* plumage.)

AFGHANISTAN: Turuk Pul, May 10, 1937, 1 ad. ♂ (*picata*); above Mama Khel, May 20, 2 ad. ♂ (*opistholeuca*); Nazhil, May 29, 1 ad. ♂ (*opistholeuca*), 1 imm. ♂; Akhbulak, July 6, 1 ad. ♂ (*capistrata*); Gumbaz, Kishm, July 7, 1 ad. ♂ (*capistrata*), 2 imm. ♂; Faizabad, July 12–15, 3 ad. ♂ (*opistholeuca*); Rubat, August 2, 1 ad. ♂ (*opistholeuca*); Rustak, August 17, 2 subad. ♂ (*capistrata*); Doab, August 23, 1939, 1 ad. ♂ (*capistrata*); Binimang, September 1, 1 imm. ♀; Chigzar, September 10, 1 ad. ♀; Tukzar, September 16, 1 ad. ♀.

KASHMIR: Baltistan: Skardo, August 12–13, 1936, 1 ad. ♂ (*capistrata*), 1 ad. ♂ (*picata*), 1 subad. ♂ (*picata*), 2 imm. ♂, 1 imm. ♀; Shigar Nulla, August 21, 1 subad. ♂ (*picata*), 1 imm. ♂; Dagoni, August 24, 1 subad. ♂ (*picata*), 1 ad. ♀; Marcha, August 29, 1 ad. ♂ (*picata*).

SIND: Karachi, December 3, 1939, 1 ad. ♂ (*picata*).

Oenanthe lugens persica Seebohm

PERSIA: Luristan: Tudar, May 13, 1941, 1 ad. ♂; Safed Koh, May 15, 1 ad. ♂; Kalisar, June 4, 1940, 1 ad. ♂; Durud, August 21–September 10, 1941, 1 ad. ♂, 1 subad. ♂, 1 subad. ♀, 1 unsexed subad., October 21, 1 ad. ♀; Pariz, August 29, 1 subad. ♀. Bakhtiari: Labisufed, April 27, 1940, 1 imm. ♂, 1 imm. ♀. Fars: Persepolis, March 10–12, 4 ad. ♂, 2 ad. ♀, all "mated"; Shiraz, March 16, 1 ad. ♀ "nesting"; Niriz, March 29, 1 ad. ♂ "nesting."

Oenanthe finschii finschii Heuglin

PERSIA: Kirman: Saidabad, December 29, 1939, 2 ad. ♂. Southern Iran: Guragan, February 10, 1940, 1 ad. ♂. Bakhtiari: Labisufed, April 27, 1 imm. ♂; Siachal, May 11, 1 imm. ♀. Luristan: Durud, January 24–25, 1941, 1 ad. ♂, 1 subad. ♂, March 28–April 5, 1 imm. ♂, 1 ad. ♀ "nesting," September 1, 1 subad. ♂; Brujird, September 28, 1 ad. ♂. Kermanshah: Qasr i Shirin, December 28, 1940–January 6, 1941, 4 ad. ♂, 1 subad. ♂, 2 ad. ♀.

Oenanthe finschii barnesi Oates

AFGHANISTAN: Northeastern Afghanistan: Khairabad, July 15, 1937, 1 imm. ♂; Teshkan Pass, August 13, 1 imm. ♂; Tuti Pass, August 15, 1 subad. ♂; Rustak, August 26, 1 ad. ♂; Lala Maidan, August 26–27, 1 ad. ♂, 3 subad. ♂, 1 ad. ♀, 1 subad. ♀. North central Afghanistan: Chigzar, September 10, 1939, 1 ad. ♂, 1 subad. ♂; Kotali Bedak, September 26, 1 subad. ♀; Maimana, October 20–30, 1 ad. ♂, 3 subad. ♂, 1 subad. ♀; Mazar i Sharif, December 6, 1937, 3 ad. ♂, 1 ad. ♀. Southern Afghanistan: Farah, October 30–November 9, 2 ad. ♂, 3 subad. ♂, 3 ad. ♀; Takhtipul, November 24, 1939, 1 ad. ♂, 1 subad. ♂.

Oenanthe deserti atrogularis Blyth

PERSIA: Luristan: Durud, March 29–April 4, 1941, 1 subad. ♂, 1 ad. ♀; Brujird, September 29, 1 subad. ♂. Khorasan: Firdaus, August 29, 1940, 1 ad. ♂; Nishabur, September 20, 1 subad. ♂; above Shahrud, September 28, 1 subad. ♂. Northern Iran: Karaj, November 2, 1945, 1 subad. ♂.

BALUCHISTAN: Quetta, November 26–28, 1939, 3 subad. ♂.

INDIA: Sind: Karachi, December 3, 1 ad. ♂, 1 subad. ♀; Soneri Lake, December 6–7, 1 ad. ♂, 2 subad. ♂, 1 subad. ♀.

Oenanthe deserti oreophila Oberholser

PERSIA: Laristan: Bandar Abbas, December 21, 1939, 1 ad. ♂, 2 subad. ♂, 1 subad. ♀. Kirman: Saadatabad, December 23–24, 2 ad. ♂, 1 ad. ♀; Mohamed Shah, January 7, 1940, 1 subad. ♂; Dehishib, January 17–18, 1 subad. ♂, 1 subad. ♀; Dehibakri, January 28, 1 ad. ♂. Southern Iran: Dehidisk, January 31, 1 subad. ♂; Tomogaon, February 4, 1 ad. ♂. Fars: Eglit, March 8–9, 1 ad. ♂, 1 subad. ♂.

AFGHANISTAN: (Breeding), northeastern Afghanistan: Sanglich, July 27, 1937, 1 imm. ♂; Munjan Pass, July 28, 1 ad. ♀; Magnaul, July 29, 1 imm. ♂, 1 imm. ♀. North central Afghanistan: Sabz Pass, August 28, 1939, 1 ad. ♂.

AFGHANISTAN: (After the breeding season), north central Afghanistan: Safedsang, September 20–22, 1939, 2 ad. ♂, 1 ad. ♀, 1 subad. ♀; Kotali Bedak, September 26, 1 ad. ♂, 4 subad. ♂; Qala Shahar, September 30, 1 ad. ♂; Khami Deh, September 30, 1 subad. ♂; Alinji, September 30, 2 ad. ♂, 1 ad. ♀, 3 subad. ♀; Malur Pass, October 4, 1 ad. ♂, 1 subad. ♂; Gurzan, October 6, 1 subad. ♂, 1 subad. ♀; Burchao Pass, October 11–12, 2 ad. ♂, 1 subad. ♂; Maimana, October 21, 1 subad. ♂; Andkhui, October 25, 2 subad. ♀. Southern Afghanistan: Mukur, October 10–11, 1937, 3 subad. ♂, 1 subad. ♀; Kalat i

Ghilzai, October 14, 1 ad. ♂, 1 subad. ♂; Farah, October 30–November 8, 1 ad. ♂, 3 subad. ♀.

INDIA: Kashmir, Baltistan: Hundar, September 10, 1936, 1 ad. ♀; Karzong, September 13, 1 ad. ♂, 1 subad. ♂, 1 ad. ♀. Kashmir, Ladak: Shyok Valley, Kampuk, September 8–9, 1 ad. ♂, 1 ad. ♀, 1 subad. ♀; Pitug, September 19–21, 5 subad. ♂, 1 subad. ♀, 1 subad. [♀]. Kashmir, Rupshu: Debring, September 27, 1 subad. ♂.

Oenanthe isabellina Temminck

EGYPT: Port Saïd, March 4, 1938, 1 ad. ♀.

PERSIA: Laristan: Isin, December 16, 1939, 1 ad. ♂; Bandar Abbas, December 20–21, 2 ad. ♀. Kirman: Chaharfarsakh, January 1, 1940, 1 ad. ♀. Southern Iran: Tomogaon, February 2–4, 1 ad. ♂, 1 ad. ♀. Fars: Eglit, March 8, 3 ad. ♂, 1 ad. ♀; Persepolis, March 11–15, 5 ad. ♂, 2 ad. ♀; Takhti Jamshid, March 13, 1 ad. ♂; Jahrum, March 23, 1 ad. ♂; Niriz, March 30, 1 ad. ♂. Luristan: Durud, January 5, 1941, 1 ad. ♂, March 5–25, 5 ad. ♂, 1 ad. ♀, April 2–3, 2 ad. ♀; April 28–May 21, 2 imm. ♂, 3 imm. ♀, June 6, 1940, 1 ad. ♂, August 26–September 5, 1941, 1 ad. ♂, 3 ad. ♀, 1 ad. ♀ ?, October 14, 1 ad. ♀. Khorasan: Gumbad i Qabus, July 30, 1940, 1 subad. ♂; Bardu, August 21, 1 ad. ♂; Firdaus, August 29–30, 2 ad. ♂; Khaur, September 5, 1 ad. ♀, 1 unsexed ad.; Shahrud, September 26, 1 ad. ♂, 1 unsexed ad.

AFGHANISTAN: (Breeding) northeastern Afghanistan: Gardez, June 16–20, 1937, 1 imm. ♂, 2 ad. ♀; Zebak, July 22, 1 imm. ♂; Munjan Pass, July 26–28, 2 ad. ♀, 1 imm. ♀; Kargasi Pass, August 8, 1 ad. ♀ (the type of *O. i. kargasi*), August 9, 2 subad. ♂, 1 imm. ♂, 1 ad. ♀; Teshkan Pass, August 13, 1 subad. ♀.

North central Afghanistan: Chigzar, September 10, 1939, 1 subad. ♀; Allaghan, September 12, 1 unsexed ad.; Tukzar, September 16, 2 ad. ♂; Sangcharak, September 16, 1 ad. ♀; Alinji, September 30, 2 ad. ♂; Malur Pass, October 4, 1 ad. ♀; Dukanshah, October 4, 1 ad. ♂, 1 ad. ♀; Gurzan, October 5–6, 2 ad. ♂, 1 ad. ♀, 2 unsexed ad.; Laorlash, October 7, 1 ad. ♂; Burchao Pass, October 12, 1 ad. ♂; Almar, October 20, 2 ad. ♂, 1 ad. ♀; Andkhui, October 25, 1 ad. ♀.

Southern Afghanistan: Farah, November 8–9, 1937, 1 ad. ♂, 1 ad. ♀.

BALUCHISTAN: Quetta, November 26, 1939, 1 ad. ♂, 2 ad. ♀.

INDIA: Sind: Soneri Lake, December 6–7, 2 ad. ♂. Punjab: Hissar, Sirsa, January 23, 1933, 1 ad. ♂.

Oenanthe monacha Temminck

PERSIA: Kirman: 4 [*sic*] Farsakh, January 8–9, 1940, 1 ad. ♂, 1 subad. ♂; Khabis, January 9–13, 2 ad. ♂, 2 subad. ♂; Chaharfarsakh, January 14–15, 1 ad. ♂, 1 ad. ♀. Southern Iran: Yezd, February 20, 1 subad. ♂. Khorasan: Robat i Khan, September 1–3, 6 subad. ♂, 2 subad. ♀.

Oenanthe alboniger Hume

PERSIA: Laristan: Isin, December 17, 1939, 1 ad. ♀. Kirman: Saadatabad, December 24, 1 ad. ♀; 4 [*sic*] Farsakh, January 8–9, 1940, 3 ad. ♂; Chahar-

farsakh, January 15, 1 ad. ♂. Iran: Cheshmaedozi, February 1, 1 ad. ♂, 1 ad. ♀. Fars: Persepolis, March 1, 1 ad. ♂; Jahrum, March 21, 1 ad. ♀. Khorasan: Robat i Khan, September 2, 2 ad. ♂; Khaur, September 5, 1 unsexed ad. Kermanshah: Qasr i Shirin, January 2–4, 1941, 2 ad. ♀.

AFGHANISTAN: Kandahar, October 17–18, 1937, 1 ad. ♂, 4 ad. ♀, 2 unsexed ad.; Dilaram, October 29, 1 ad. ♂; Farah, November 8, 1 ad. ♂, 1 ad. ♀; Takhtipul, November 24, 1939, 2 ad. ♂.